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**US Army Corps
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**CULTURAL RESOURCES SERIES
Contract No. DACW29-88-D-0121
Delivery Order No. 02
COELMN/PD-90/04**

AD-A225 277

**CULTURAL RESOURCES SURVEY OF
GRETNA PHASE II LEVEE ENLARGEMENT ITEM
M-99.4 TO 95.5-R, JEFFERSON PARISH, LOUISIANA**

January 1990

FINAL REPORT

**R. Christopher Goodwin & Associates, Inc.
5824 Plaque Street
New Orleans, LA 70123**

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PREPARED FOR:

**U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267**

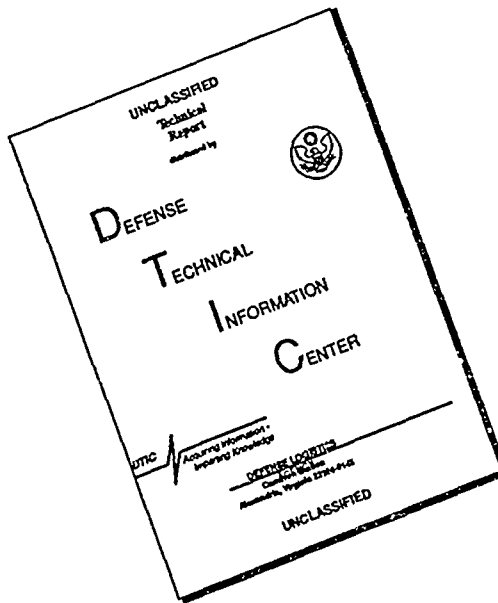
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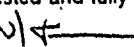
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REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
1a. REPORT SECURITY CLASSIFICATION			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION/AVAILABILITY OF REPORT		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			Unlimited.		
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
			COELMN/PD-90/04		
6a. NAME OF PERFORMING ORGANIZATION R. Christopher Goodwin & Associates, Inc.		6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION U.S. Army Corps of Engineers New Orleans District		
6c. ADDRESS (City, State, and ZIP Code) 5824 Plaque Street New Orleans, LA 70123		7b. ADDRESS (City, State, and ZIP Code) P.O. Box 60267 New Orleans, LA 70160-0267			
8a. NAME OF FUNDING, SPONSORING ORGANIZATION U.S. COE New Orleans District		8b. OFFICE SYMBOL (If applicable) CELMN-PD-RA	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER DACW29-88-D-0121, Delivery Order 02		
8c. ADDRESS (City, State, and ZIP Code) P.O. Box 60267 New Orleans, LA 70160-0267		10. SOURCE OF FUNDING NUMBERS			
		PROGRAM ELEMENT NO. N/A	PROJECT NO. CIVIL WORKS	TASK NO. FUNDED	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) CULTURAL RESOURCES SURVEY OF GRENA PHASE II LEVEE ENLARGEMENT ITEM, M-99.4 to 95.5-R, JEFFERSON PARISH, LOUISIANA					
12. PERSONAL AUTHOR(S) R. Christopher Goodwin, William P. Athens, Stephen Hinks, Paul C. Armstrong, and Jennifer A. Cohen					
13a. TYPE OF REPORT Final		13b. TIME COVERED FROM _____ TO _____		14. DATE OF REPORT (Year, Month, Day) January 1990	
15. PAGE COUNT 129					
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP			
05	06		Brick kiln Gardere Canal Harvey McDonoghville		
			Brickyard Gretna Historic Archeology		
			Destrehan Canal Harvey Canal Jefferson Parish		
19. ABSTRACT (Continue on reverse if necessary and identify by block number)					
<p>During October and November 1988, R. Christopher Goodwin & Associates, Inc. conducted a Level II cultural resources survey of the Gretna Phase II, Levee Enlargement Item on the west (right descending) bank of the Mississippi River near Gretna, Louisiana. Six historic archeological sites and three historic standing structures were recorded. Site 16JE207 is a multicomponent site that may include an antebellum brickyard, part of an historic formal garden, and possibly antebellum drainage system elements. Site 16JE208 is a late nineteenth to early twentieth century wharf used by the Louisiana Cypress Company. Site 16JE209 consists of the remains of one to three circa 1890 double shotgun houses that were torn down after 1960. Site 16JE210 may represent the remains of a late nineteenth and early twentieth century brick kiln. Site 16JE211 is a late nineteenth to early twentieth century deposit of ceramic chemical ring fragments and hand and machine-made bricks. Site 16JE212 is a deeply buried deposit of nineteenth century artifacts on the modern batture within the historic town of McDonoghville. Sites 16JE208, 16JE209, and 16JE211 lack integrity and no further work is recommended at these sites. Because of redesign of levee setback plans after this study was initiated, Site 16JE210 is no longer in danger of being impacted; therefore, no further archeological testing is required there. However, if future construction threatens the site, it should be tested and fully evaluated. Further testing is recommended at Sites 16JE207 and 16JE212 in order to determine their nature and significance. (SDW) </p> <p>Three standing structures were recorded: a bell and platform and two houses. The bell and platform (SS-1) were erected at the downriver mouth of the Harvey Canal between 1910 and 1937; the bell was used most recently to direct the flow of riverine traffic into the canal. The structure has been modified extensively and will be dismantled prior to the construction of the planned Harvey Canal guide wall modifications. Structure SS-2 is a single-residence shotgun house located at the west edge of McDonoghville; structure SS-3 is an adjacent double shotgun house. Both houses were built ca. 1930-1945 and have been modified extensively. None of these structures are significant, and no further work is recommended.</p>					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT			21. ABSTRACT SECURITY CLASSIFICATION		
<input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS					
22a. NAME OF RESPONSIBLE INDIVIDUAL Carroll H. Kleinhans			22b. TELEPHONE (Include Area Code) 504-862-2548		22c. OFFICE SYMBOL CELMN-PD-RA



DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO:
ATTENTION OF:

January 18, 1990

Planning Division
Environmental Analysis Branch

To The Reader:

This report of survey and site inventory was prepared for the U.S. Army Corps of Engineers, New Orleans District in advance of construction of the Gretna Phase II Levee Enlargement Item. The survey corridor coincides with the heavily industrialized west bank of the Mississippi River in Jefferson Parish, Louisiana. Six historic archeological sites and three standing structures were recorded and assessed to determine their significance. By letter dated January 31, 1989, the Louisiana State Historic Preservation Officer agreed that three of the sites (16JE208, 16JE209, 16JE211) and all three standing structures are not significant and require no further investigation. Sites 16JE207, 16JE210, and 16JE212 were determined to be potentially significant. Each requires additional testing to assess the scientific value of subsurface deposits and features identified in each site.

Since this survey was completed, the project has been partially redesigned. All levee setback segments have been deleted, removing 16JE210 from the project corridor. As the project changes, the agency will continue to monitor potential impact to 16JE210. However, no testing is planned unless an impact is identified. Sites 16JE207 and 16JE212 will be tested and appropriate mitigative action will be taken prior to construction, in accordance with 36 CFR 800, Protection of Historic Properties.

Carroll H. Kleinhans

Carroll H. Kleinhans
Authorized Representative
of the Contracting Officer

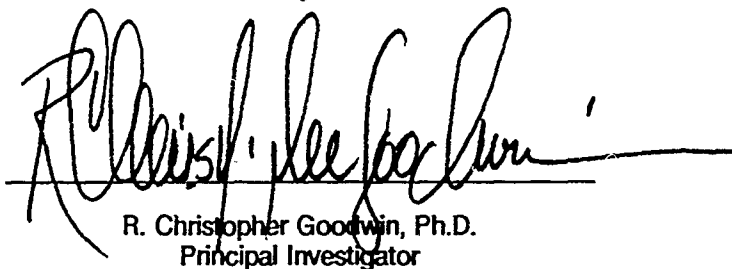
R. H. Schroeder, Jr.

R. H. Schroeder, Jr.
Chief, Planning Division

**CULTURAL RESOURCES SURVEY OF
GRETN A PHASE II LEVEE ENLARGEMENT ITEM
M-99.4 TO 95.5-R
JEFFERSON PARISH, LOUISIANA**

FINAL REPORT

By



R. Christopher Goodwin, Ph.D.
Principal Investigator

With

William P. Athens, Stephen Hinks, Paul C. Armstrong, and Jennifer A. Cohen

R. Christopher Goodwin & Associates, Inc.
5824 Plauche Street
New Orleans, LA 70123

January 1990

For

U.S. Army Corps of Engineers
New Orleans District
P.O. Box 60267
New Orleans, LA 70160-0267

Contract No. DACW29-88-D-0121, Delivery Order 02

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CHAPTER I

INTRODUCTION

This report presents the results of a cultural resources survey of the proposed Gretna Phase II Levee Enlargement Item, located on the west (right descending) bank of the Mississippi River between River Miles M-99.4-R and M-95.5-R Louisiana (Figure 1). The survey was performed during October and November 1988 by R. Christopher Goodwin & Associates, Inc., for the United States Army Corps of Engineers, New Orleans District, pursuant to Delivery Order 02 of Contract DACW29-88-D-0121.

The project area begins approximately one mile upriver from the Harvey Canal and extends downriver to the Jefferson Parish line. The levee enlargement project will raise the height and expand the base of the levee and set back the levee in two locations. The new elevation for the levee will be 24.7 ft NGVD at the upriver end of the item, and 23.9 ft NGVD at the downriver end. This will raise the current levee elevation by approximately two feet (60 cm), and the levee base will be expanded to maintain a standard grade. The levee centerline may be moved inland in five areas; two setback and three right-of-way enlargement areas, all inland from the existing right-of-way, were included in the cultural resources survey. The two setback areas were located just downriver from the Harvey Canal, while the three levee right-of-way enlargements were located in or near the historic town of McDonoghville. Because construction activity will impact the batture, the batture within the project area also was surveyed. Table 1 lists the areas surveyed. The entire reach (including the setback areas and right-of-way enlargements, but excluding "no work areas") was surveyed for cultural resources (Figure 1).

This survey was designed to identify and to inventory all archeological sites and historic standing structures within the project corridor, to enable evaluation of the resource potential of any identified cultural resources. Archival research focused on the economic development of the Westbank, especially within the project area. Data obtained during archival research were used in interpreting identified archeological sites and in assessing the research potential of those sites.

Field investigations consisted of intensive pedestrian survey followed by extensive subsurface testing both within areas identified as potential historic site areas, and within all levee setbacks and right-of-way enlargements. Approximately 95 acres were surveyed and tested. During this survey, six historic archeological sites (16JE207, 16JE208, 16JE209, 16JE210, 16JE211, and 16JE212) were located and identified. In addition, three historic standing structures were recorded and evaluated.

Organization of the Report

Chapter II examines the natural setting of the project area. This chapter addresses historic changes to the batture and examines the natural environment within the project area. Previous archeological investigations near the project area are summarized in Chapter III. Chapter IV discusses the historical and economic development of the project area. Chapter V explains the research design developed prior to fieldwork and the field methods used to implement the research design. The results of the fieldwork are contained in Chapter VI. Chapter VII describes analysis of the recovered artifacts, and discusses, in general, those artifacts recovered from the archeological sites. The archeological sites are described and interpreted in their historic context, and the historic standing structures are discussed. The summary and recommendations are presented in Chapter VIII. This chapter considers the significance of the sites, applying the National Register of Historic Places criteria (36 CFR 60.4). The necessity for future work in the project area, and the direction and nature of that work also are discussed.

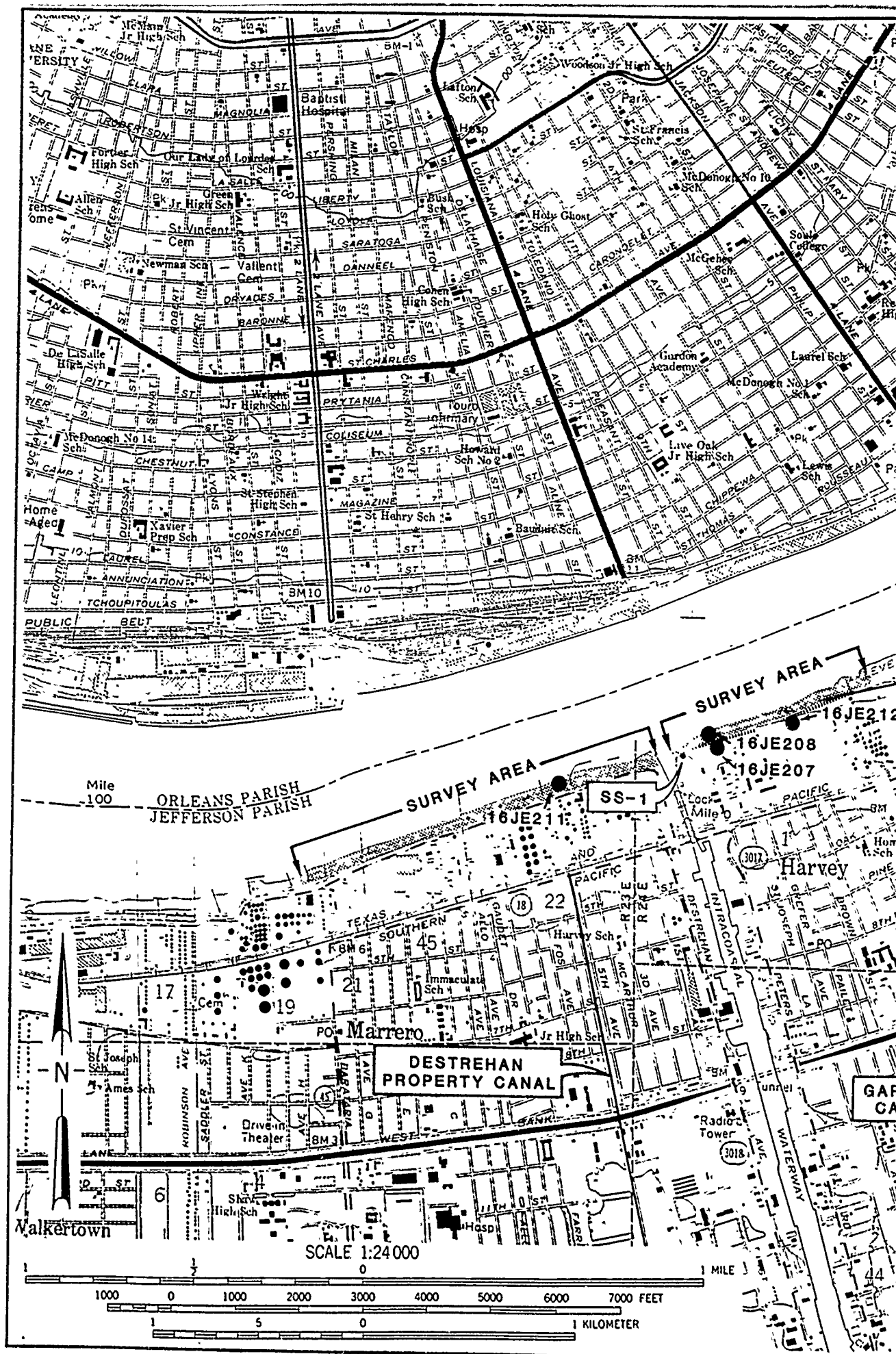


Figure 1. Excerpt from the 1966 (photorevised 1972 and 1979) USGS 7.5 minute series topographic quadrangle, New Orleans East, Louisiana, showing the location of the project area and located archeological site.

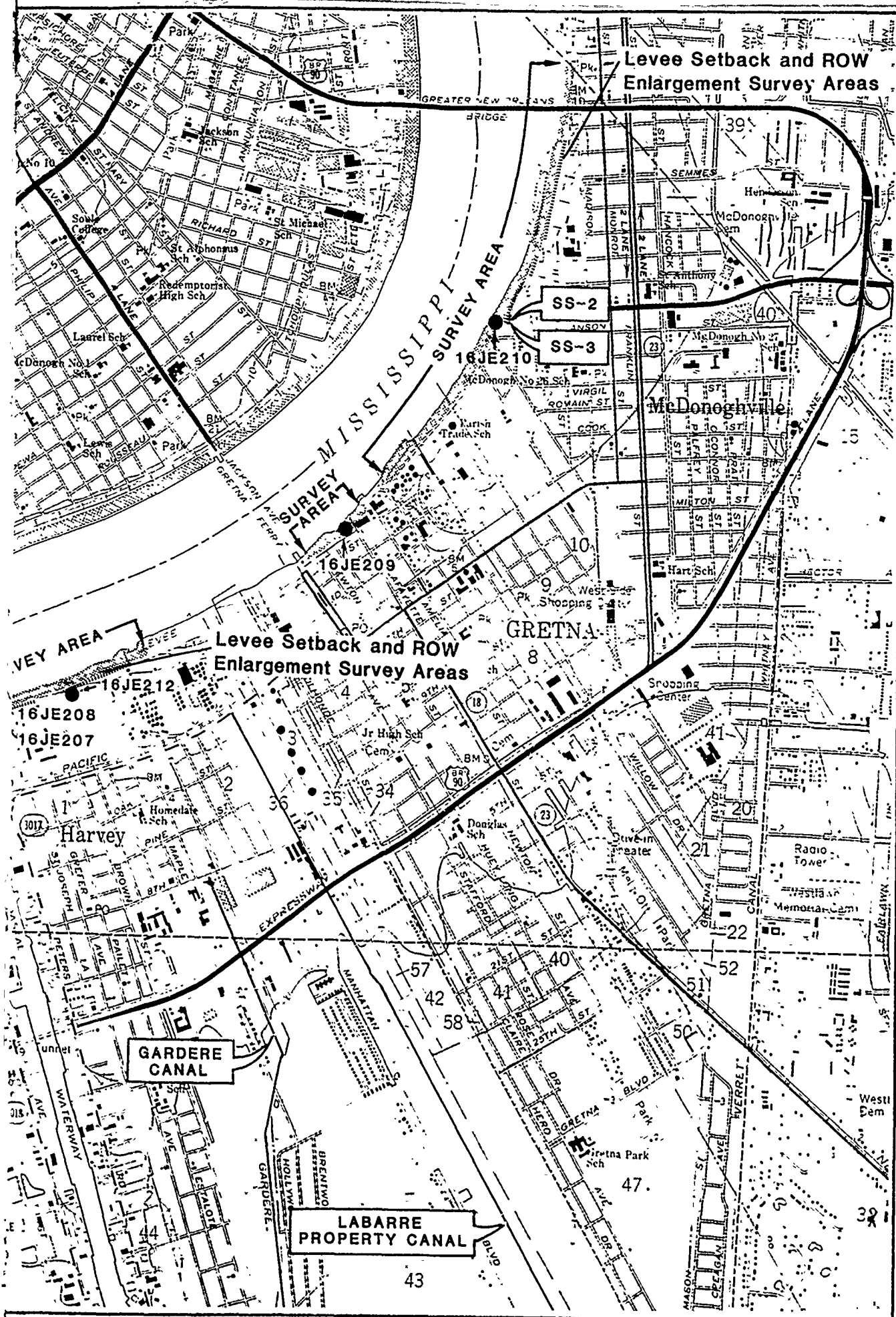


Table 1

RIVER MILE AND LEVEE STATION NUMBERS OF SURVEY AREAS

<u>Area</u>	<u>Construction</u>	<u>River Mile</u>	<u>Number</u>
Batture, West of Harvey Canal	Levee Enlargement and I-Wall	99.4 to 98.3 -R	4088+00-4149+55
Batture, Between Harvey Canal and Gretna Ferry	Levee Enlargement and I-Wall	98.2 to 97.7-R	4153+00-4188+50
Landside Easement, Setbacks Between Harvey Canal and Gretna Ferry	2 Levee Setbacks	98.2 to 97.8-R	4060+50-4069+00 4072+00-4083+50
Batture, East of Gretna Ferry, Between Ferry and Floodwalls	Levee Enlargement	97.1 to 97.0-R	4218+27-4227+62
Batture Revetment, Gouldsboro Bend Revetment, From Floodwalls to Parish Line	Levee Enlargement and I-Wall	96.8 to 95.5-R	4237+00-4312+81
Levee Right-of-Way Enlargements Between Floodwalls and Parish Line	3 Levee Right-of-Way Enlargements	96.5 to 95.9-R	4268+00-4275+70 4276+50-4281+00 4282+50-4299+00

CHAPTER II

THE SETTING

The project area extends from River Miles M-99.4-R to M-95.5-R on the west bank of the Mississippi River directly across the river from the city of New Orleans. The area is within Jefferson Parish, adjacent to the Mississippi River, and within the Mississippi deltaic plain. The area lies within several natural zones. This chapter examines these zones, the natural setting, and the geological and cultural processes that interact to alter the archeological data base within the project area.

The southern Louisiana climate is humid and subtropical. Temperatures average 54° Fahrenheit in the winter and 81° Fahrenheit in the summer (United States Department of Agriculture 1983). The lowest temperature on record for nearby New Orleans is 7° Fahrenheit; this occurred in February 1899. The record high temperature of 102° Fahrenheit occurred on August 22, 1980 (Robin Radlein, National Weather Service, personal communication 1988). Annual precipitation is 59 inches, with a majority of the rainfall (33 in) occurring between April and September (United States Department of Agriculture 1983). October is generally the driest month; July is the wettest (Gooselink 1984).

The area falls within the southern Mississippi Alluvial Valley subregion of the Coastal Plain. This subregion is characterized by gently sloping, broad flood plains with low terraces. The only noticeable features within the Mississippi Alluvial Plain in the survey area are the natural levees that rise adjacent to bottom lands and stream channels (United States Department of Agriculture 1969).

The Sharkey-Commerce soils group is the only broadly defined soils group located in the survey area. Commerce Silt Loam is the dominant soil subtype found within the project area. Commerce Silt Loams are found deposited in narrow bands along the natural levees of the Mississippi River and its distributaries. These soils range in elevation from 1 to 12 ft above sea level with slopes averaging less than one per cent. They occupy intermediate to high positions on the natural levees, and are composed of a surface layer of very dark grayish brown silt loam or silty clay over a subsoil of dark grayish brown or grayish brown mottled silt loam. Soil horizons in the area tend to be weakly defined; underlying strata are grayish brown, mottled loam, and silty clay loam (United States Department of Agriculture 1983). These descriptions appear consistent with observations made during Level II excavation and testing of soils lying beneath strata associated with modern levee construction.

The highly fertile batture soils are somewhat poorly drained. The batture is flooded frequently, normally in the spring, by the Mississippi River, with flood waters ranging from 2 to 10 ft. The soils are inceptisols or wet soils that are seasonally or permanently saturated with water. The water table fluctuates from 1.5 to 4 ft below ground surface (United States Department of Agriculture 1983). Although usually moist, these soils can dry out during the non-flood season (United States Department of Agriculture 1969).

The batture area supports vegetation typical of the initial stages of ecological succession. Initial willow forest is dominated by black willow (*Salix nigra*), with eastern cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), and sugarberry (*Celtis laevigata*) comprising the major overstory vegetation. Sweet gum (*Liquidambar styraciflua*), green ash (*Fraxinus pennsylvanica*), nuttall oak (*Quercus nuttallii*), water oak (*Quercus nigra*), elm (*Ulmus* sp.), and pecan (*Carya illinoensis*) may occur as well. Predominant understory vegetation includes poison ivy, grape, trumpet creeper, groundnut, buckwheat vine, and sandvine (Conner et al. 1975).

Faunal species important to early historic settlers in the area included the black bear (*Euarctos americanus*), mountain lion (*Felis concolor*), deer (*Odocoileus virginianus*), cottontail rabbit (*Sylvilagus floridanus*), swamp rabbit (*Sylvilagus aquaticus*), raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), opossum (*Didelphis marsupialis*), gray squirrel (*Sciurus carolinensis*), and fox squirrel (*Sciurus niger*). In addition, several species of birds, fish, and reptiles were common in the project area (Shelford 1963; Lowery 1974).

The dominant feature affecting the project area is the Mississippi River. The Mississippi River drains an area of 3,344,560 square km; this is the third largest drainage area in the world and it extends over more than 40 per cent of the conterminous United States (Coleman 1976; Cry 1978). Materials from as far away as the Rocky Mountains are deposited in the Mississippi River delta region (Kolb and Van'Lopik 1958). The river is characterized by lateral migration, meanders, cutoffs, and crevasses (United States Department of the Interior 1984). From Old River, Louisiana, to the Gulf of Mexico, however, meanders decrease in number; the channel becomes narrower and deeper; and, the slope begins to decrease (Cry 1978).

Geomorphological and cultural processes along the Mississippi River both help and hinder the archeologist's ability to locate cultural resources in the project area. Riverine, geological, and cultural processes interact to destroy, and in some cases to preserve, archeological remains. Within the survey area, a cutbank on the westbank of the Mississippi River extends from the Harvey/Gretna area downriver past McDonoghville. Cutbanks are formed on the side of the river containing the thalweg where the increased velocity of the water scours the bank, resulting in bank caving. Sites located along these cutbanks often are destroyed through erosion.

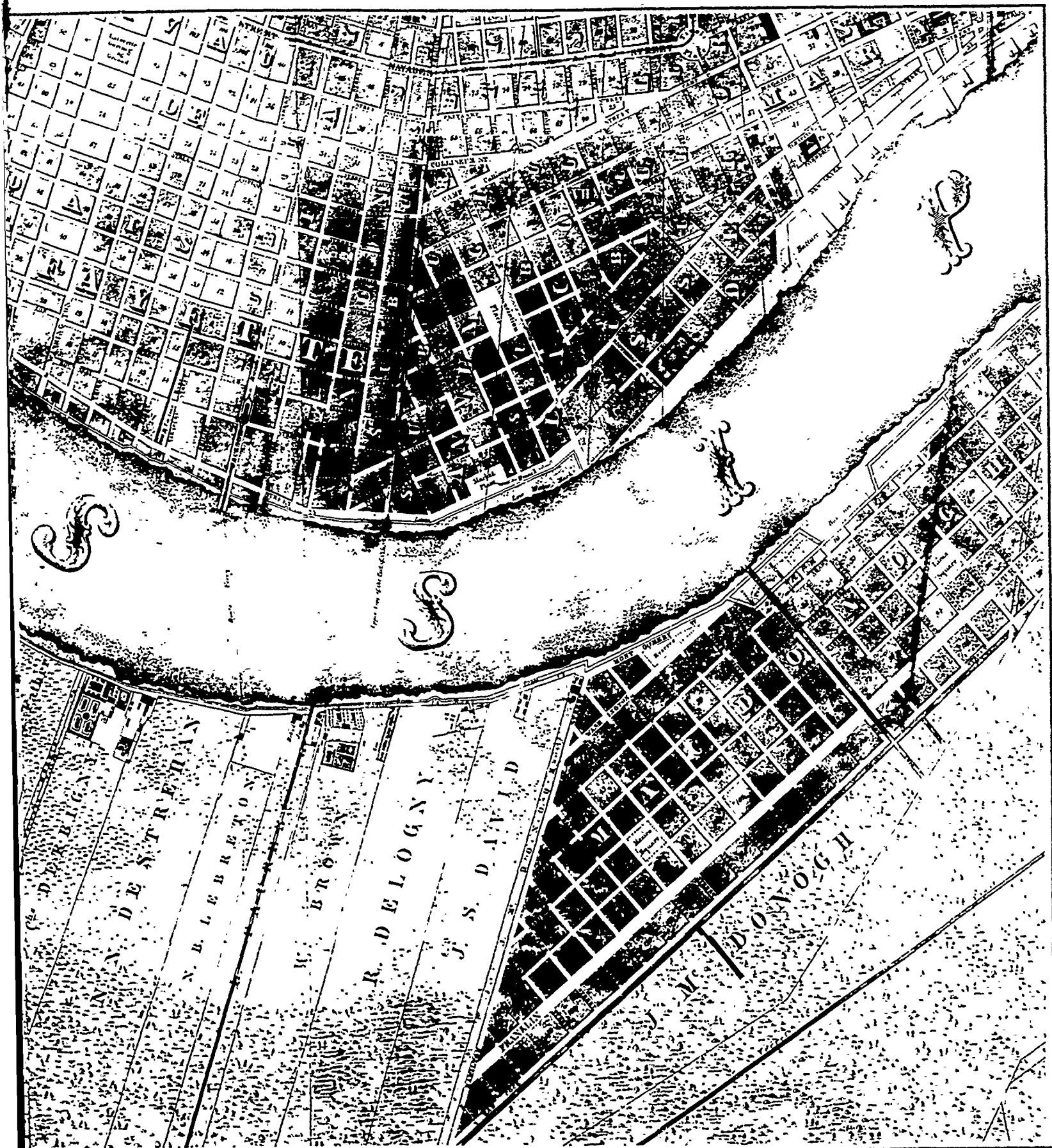
Three processes in particular affect site preservation in the project reach. These are overbank flooding, bankline erosion, and aggrading. Overbank flooding, which increases the speed and force of the river, both destroys sites and preserves them. Sites on the batture often are destroyed as cutting becomes more severe. On the other hand, flooding can preserve sites by capping them with layers of silt. This capping of sites with riverine sedimentation can adversely affect sites by masking them and by inhibiting site identification during archeological surveys.

The confinement of the Mississippi River with levees and revetments has restricted deposition and erosion to the batture. However, this confinement increases both bankline cutting and site destruction.

Bankline erosion is caused not only by the natural elements such as wind, rain, and the fluvial processes of the river (cutting and aggrading), but by manmade factors as well. In some areas, wave action from ships is more destructive to adjacent marshes, bayous, and river banks than tidal erosion. For example, along some portions of the lower Mississippi River, the United States Army Corps of Engineers has been forced to construct foreshore protection dykes to protect the river bank from erosion caused by ship-generated wave action. This has been an increasing problem since the 1950s, corresponding with the increasing use of the river by large ships (Robinson and Ethridge 1985:342-343). Since the ports between New Orleans and Baton Rouge handle more tonnage than any port in the United States, the effect of wave action generated by sea-going vessels is considerable (Gooselink 1984). When an archeological site is located above the water line on vertical cutbanks or bluffs, wave action at the toe of the bluff undercuts the base causing large chunks of the matrix to fall off or slump into the river (Gramman 1982).

A comparison of the 1834 Zimpel map and the 1979 photorevised New Orleans East, LA USGS 7.5' series topographic quadrangle shows substantial changes in the river's course over the past 150 years (Figures 2 and 3). This comparison is based on the necessary assumption that the 1834 Zimpel map is accurate. It is recognized that early nineteenth century cartographic equipment was inadequate to produce maps as accurate as modern maps. However, the 1834 Zimpel map has proved accurate enough to plot the approximate locations of structures and features onto the modern topographic map, and to assess approximate bankline changes. To analyze these changes, the 1834 Zimpel map and the 1979 photorevised USGS topographic quadrangle were digitized and rescaled, and parallel north/south transects were drawn at 500 m intervals to assess the effects of fluvial processes. This analysis shows that since 1834, substantial cutting and aggrading has occurred within the study area. Beginning at the upriver end of the project area, lateral migration and cutting has resulted in the loss of more than 500 ft of bankline. Bankline erosion decreases as one moves downriver toward the Harvey Canal. The area adjacent to the Harvey Canal has been fairly resistant to channel migration and erosion. Historical documents state that "the banks and levees at the river end of the Harvey Canal were composed of blue clay that resisted the action of the water, and no caving or washing has been known at this point" (Byrne 1987).

Aggrading begins downriver from the Harvey Canal where more than 250 ft have been added to the bankline. As the river passes by Gretna and moves towards McDonoghville, it turns northward, forming a



*BANKLINE EROSION AND AGGRADING:
A COMPARISON OF THE 1834 ZIMPEL MAP
AND THE 1979 PHOTOREVISED 7.5 MINUTE
TOPOGRAPHIC QUADRANGLE*

HIS7

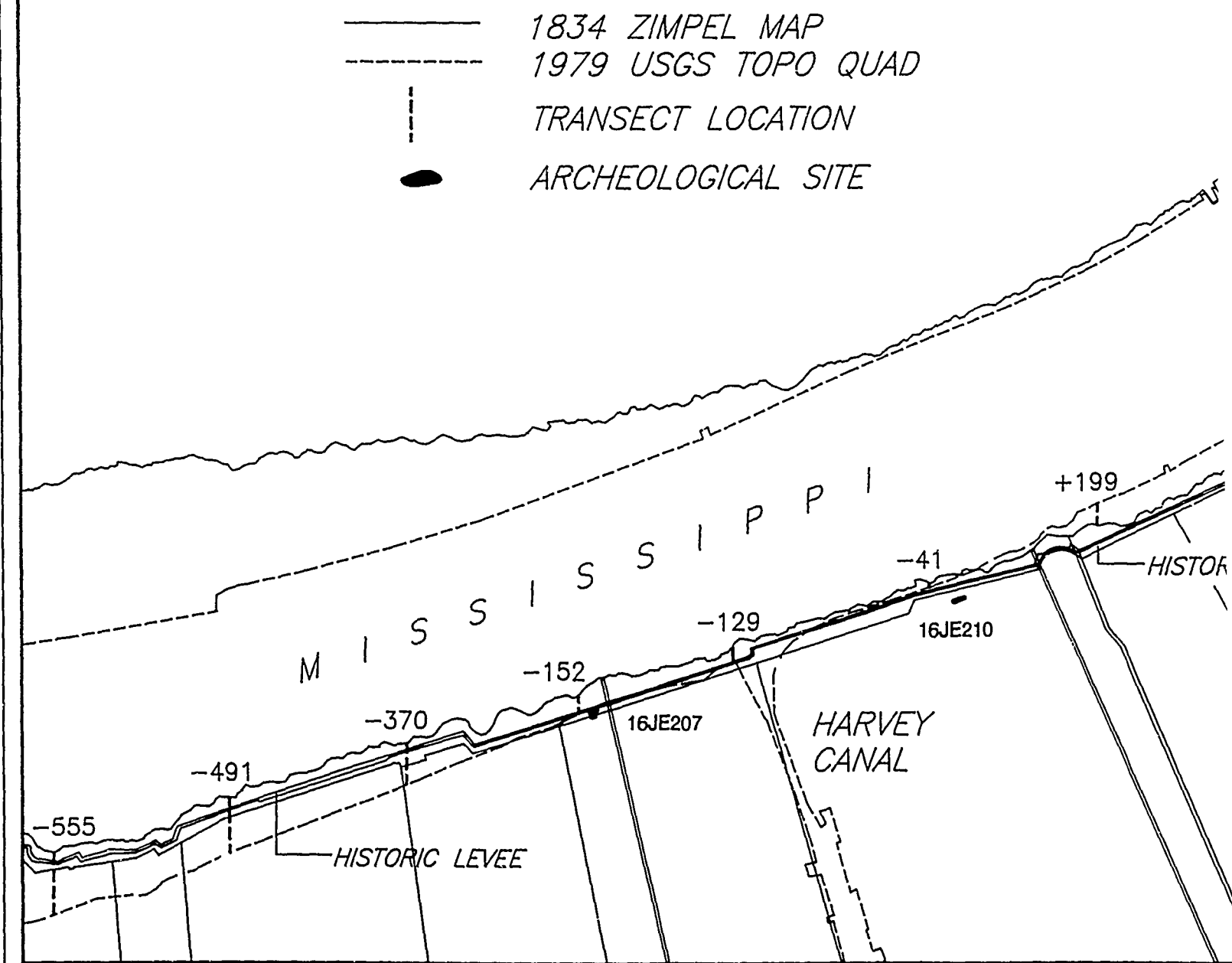
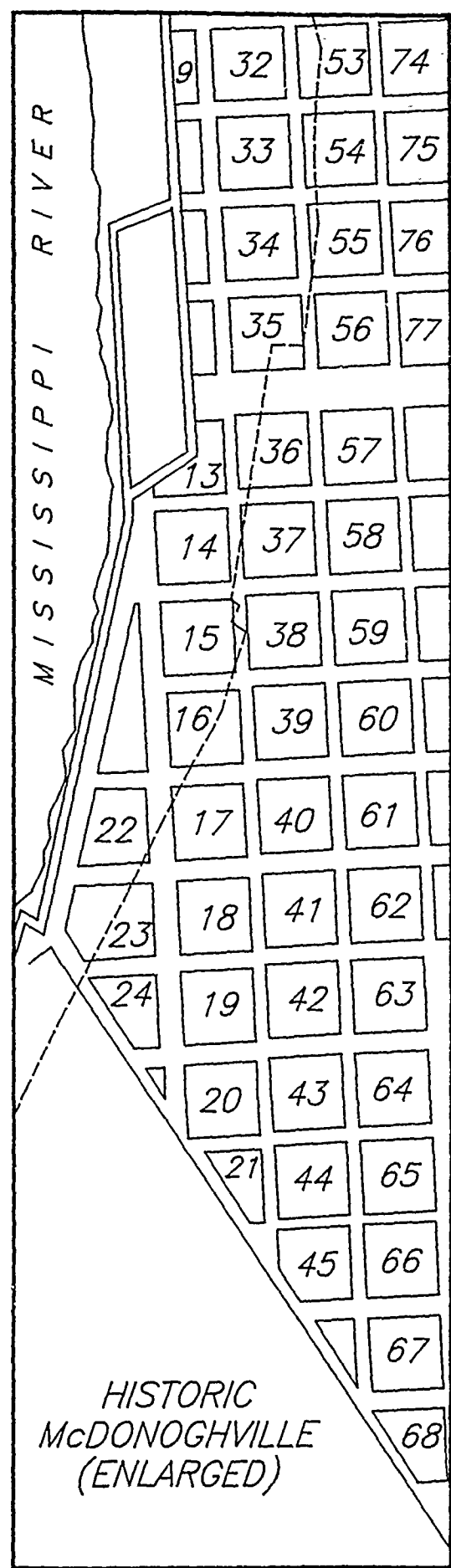
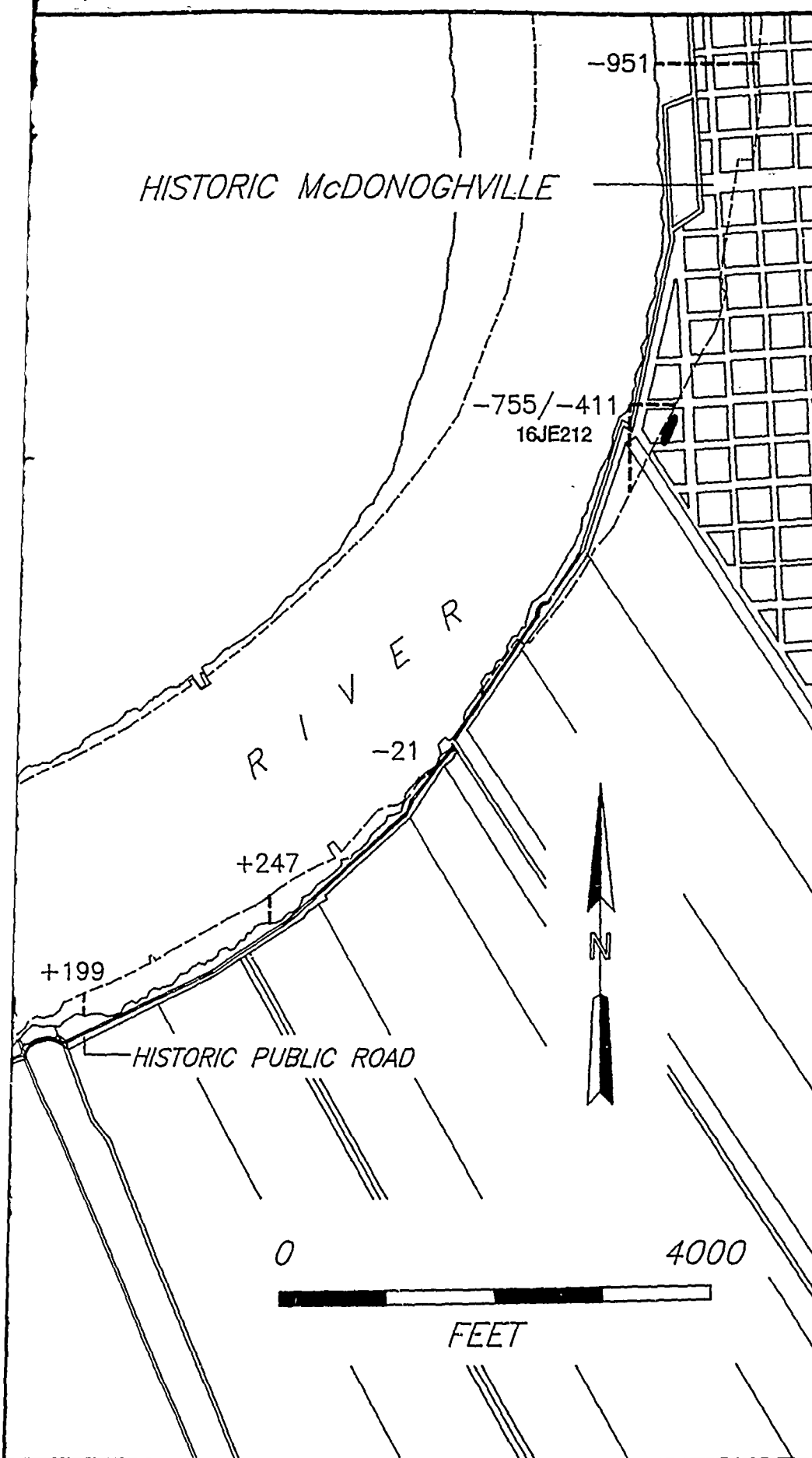


Figure 3. Composite map of study area showing bankline erosion and archeological sites 16JE207, 16JE210, and 16JE212.



cutbank. This cutting has resulted in the erosion of more than 950 ft of bankline near the Greater New Orleans Bridge.

Numerous cultural resources in the survey reach have been destroyed by riverine cutting. Moving from the upriver project boundary and progressing downriver, these deposits include the public road and historic levee which ran throughout the project area, a brickyard, and several unidentified buildings and a store on or near the property belonging to W. Dogherty. Similarly, properties formerly belonging to P. Trouard, J. Fazende, J. Verloin Degruy, B. Saulet, N. N. Destrehan, and A. Foucher (Son) were impacted by bankline cutting. Archeological deposits impacted by cutting banklines include features associated with gardens and unidentified buildings on the properties of Trouard and Fazende. The Mississippi River now flows where six unidentified structures and part of a large pond once stood on the Degruy property. Moving downriver toward the Harvey Canal, the impact on historic cultural features decreases. While substantial erosion has occurred on properties once owned by Saulet and Destrehan, no standing structures were impacted. This includes two unidentified structures on the 1839 Springbett and Pillie Map (Figure 4), and the formal gardens belonging to N. N. Destrehan. A brickyard and several other structures located on the downriver edge of the Destrehan property were not effected by erosion. However, the construction of the Harvey Canal, and later widening and other structural modifications probably destroyed any archeological deposits pertaining to these structures.

Downriver from the Harvey Canal, an aggrading situation occurs. Over 200 ft of sediments have been deposited along the river bank (Figure 3). This process helped shield archeological deposits associated with the Foucher Plantation, the Derbigny Plantation, and the Destrehan Plantation (the downriver property) from erosion. Portions of the historic levee and the public road still may exist in this area. However, industrial construction may have impacted, if not destroyed, any remains associated with the road, the levee, or the aforementioned plantations.

Bankline erosion increases downriver from the N. B. Lebreton Plantation. This process did not impact the buildings associated with the Lebreton property, the brickyard, sawmill, and outbuildings located on the Faures property, or the buildings and gardens located on the Brown Plantation. The area associated with several buildings belonging to R. Delogny has been washed down river.

Downriver from the Delogny Property, bankline cutting increases dramatically. Several areas associated with unidentified buildings on properties belonging to J. S. David and J. McDonogh have been washed away. The 1822 Bouchon map depicts a small portion of the public road and levee located just downriver from the town of McDonoghville (Figure 5). This area and substantial portions of the town of McDonoghville have been eroded away by cutting banks (Figure 3).

Within the McDonoghville area, numerous streets including Montgomery, Washington, Adams, Anson, Perlander, Gallatin, Perry, Copernicus, Americus, Prevost, Shepherd, Columbus, Magellan, Bringier, Laurence, Ptomely and Socrates have been impacted or destroyed by the river's lateral migration. Numerous city blocks, including Blocks 9-17, 22 and 23, and Blocks 32-37, have been disturbed through this erosional process (Figures 2 and 3).

Flooding occurred regularly in the Gretna area. The area flooded nearly every spring before construction of the modern system of levees and water control structures built by the United States Army Corps of Engineers. Even with the construction of the early historic levees, crevasses or large breaks in the levee were common; the last crevasse in the Gretna area occurred in 1912 (Curry 1986).

Crevasses played an important role in altering the area's bankline. The 1863 Banks map (Figure 6) shows Bell's Crevasse located near modern day Marrero. Bell's Crevasse opened on the property of John M. Bell on April 11, 1858, at a spot in the levee where a wooden sluice was used to fill a pond located just behind the levee. This pond was created by an earlier crevasse which opened in 1802. Prior to the 1858 crevasse, the sluice was removed, the space was filled improperly, and during a period of high water the crevasse developed. Another crevasse opened on March 16, 1881, near Gretna. Levees kept back the water for several weeks. However, on April 5, 1881 Gretna's protection levee broke, and by that evening water covered much of historic Gretna (Swanson 1975). Thoede, commenting on the crevasse floods,

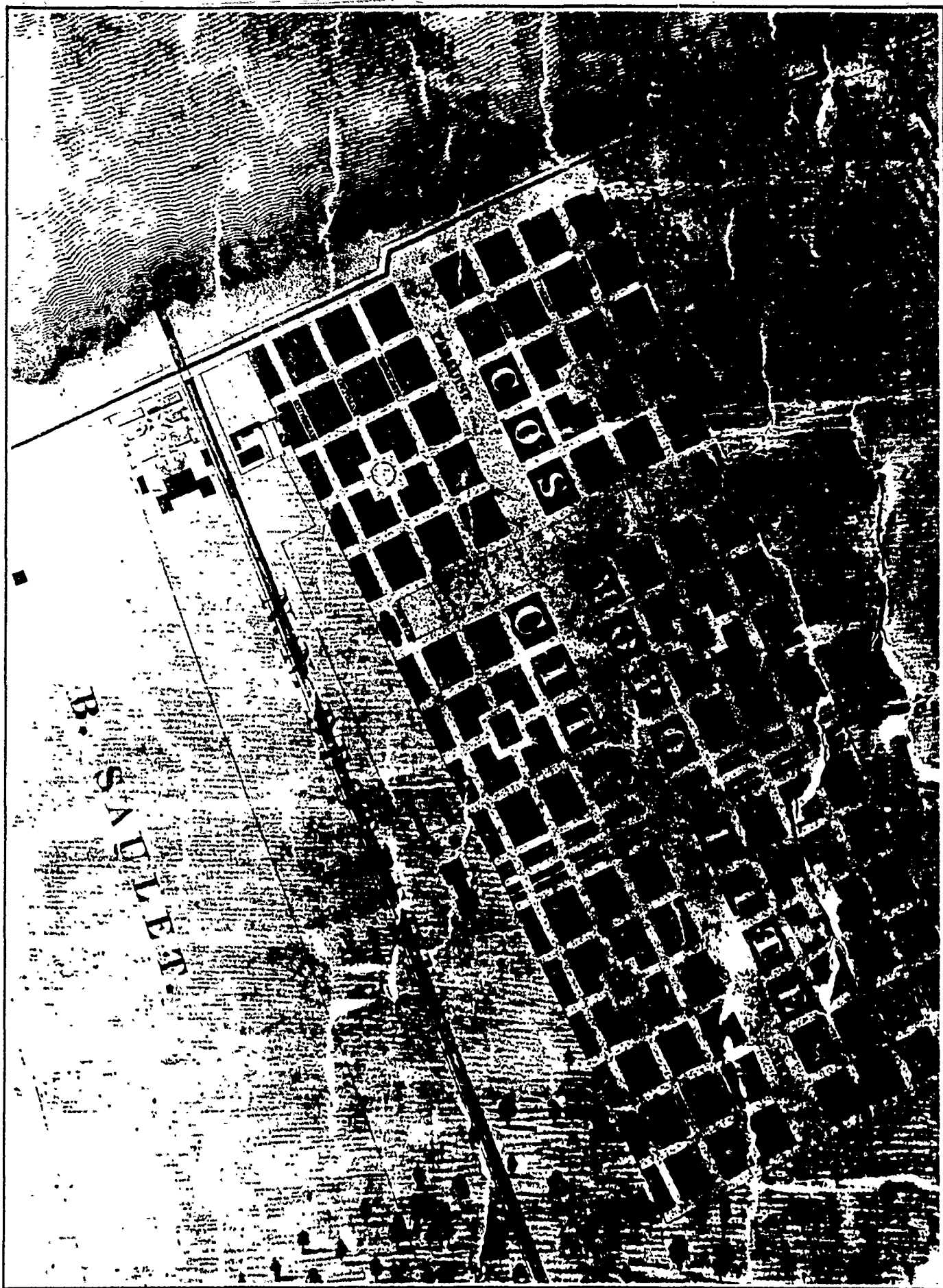


Figure 4. Excerpt from Springbett and Pille's 1839 map of New Orleans showing Destrehan property and Cosmopolite City subdivision (Louisiana Collection, Tulane University Library).

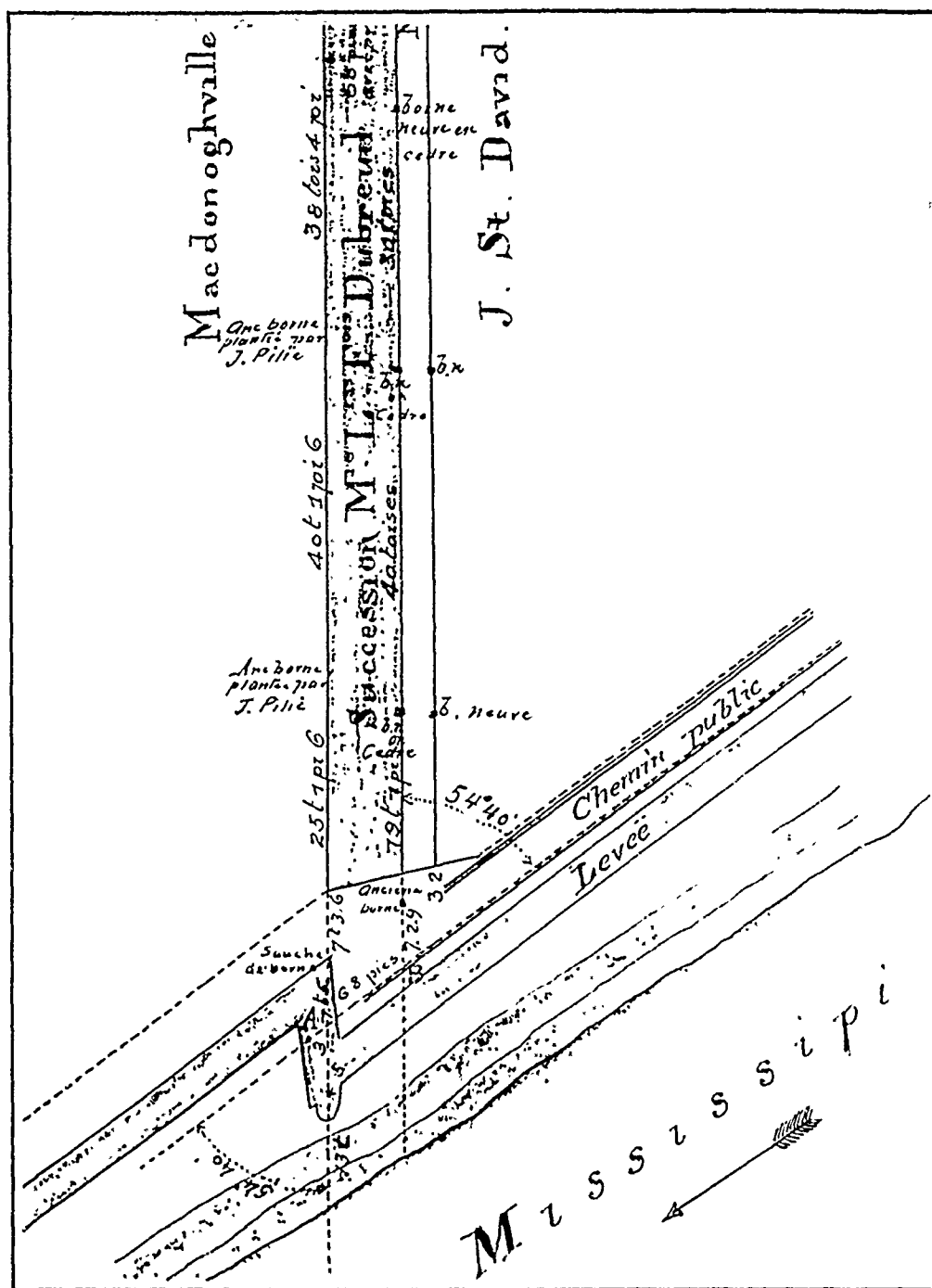


Figure 5. 1822 survey map by C. N. Bouchon showing levee and public road in McDonoghville (Archives, Center for Regional Studies, Southeastern Louisiana University).

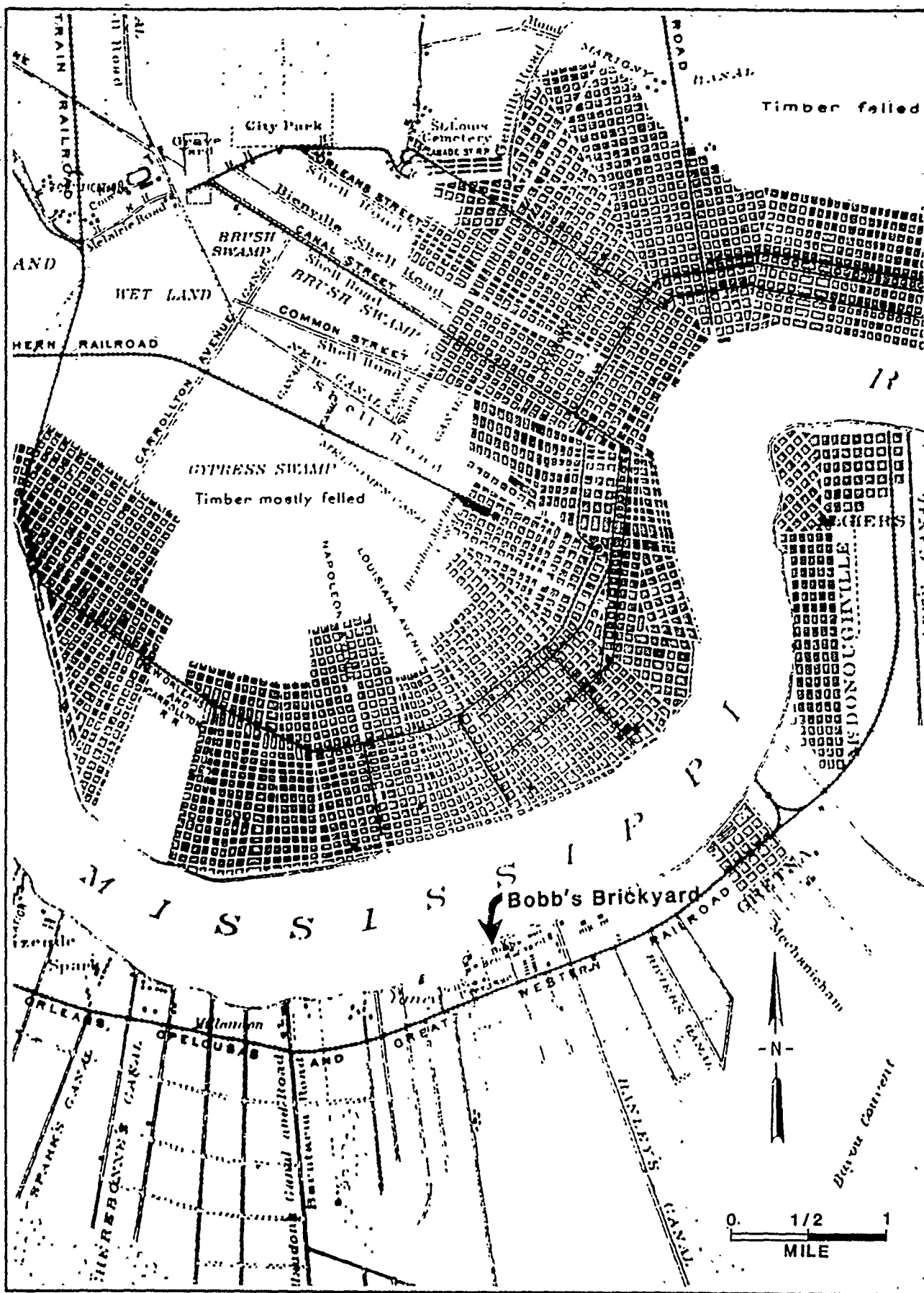


Figure 6. Bank's 1863 map *Approaches to New Orleans*, showing Bobb's Brickyard (Louisiana Collection, Tulane University Library).

stated:

Prior to the late 1800s, when a levee broke anywhere within a radius of about 40 miles of Gretna, West Bank residents would immediately prepare readying their pirogues and skiffs to either evacuate or to prepare for the building of false floors in their homes (Thoede 1976:26).

The years 1881, 1891, 1896, 1912, and 1927 were memorable flood years in the study area. These inundations caused severe damage to truck crops, as well as to businesses and residences. Modern levee construction after 1927 decreased wide scale flooding in the project area.

While bankline cutting and erosion, crevasses, and other natural agents impact the archeological resources within the project area, cultural factors impact the area, as well. Industrialization of the area has disturbed severely the deposits within and immediately outside the study area. Large tanker farms, granaries, and other industrial complexes stand where plantation houses, sawmills, brickyards, and ornamental gardens once stood. The construction of levees, revetments, and other flood control items impact the resource base through grading and excavating the ground surface. The modern development of the batture has had considerable effect on soil deposits and archeological remains. In addition to modern levee construction, the entire project area has been reveted to impede continued cutting of the riverbank.

During artificial levee construction, the levee foundation is cleared of organic debris. Tree stumps and roots more than an inch in diameter are removed to a depth of 6 ft, often by blasting. Historically, a six-foot deep muck ditch was excavated and refilled, normally along the levee centerline, to disrupt the normal flow of subsurface water (Elliott 1932). Surrounding depressions, including archeological features, are filled to grade. The ground surface at and near the levee under construction is grubbed to promote bonding between the artificial levee and the natural ground surface. Soils for the levee normally are obtained from borrow pits on the riverside of the levee (Elliott 1932), destroying possible archeological sites located there. In addition, construction processes using large earthmoving machines often disturb the surrounding surface deposits. The effect of these levee and revetment construction techniques on the archeological record was discussed in detail in Goodwin, Hinks et al. 1989.

Revetment construction also disturbs archeological remains near the river. The initial phases of revetment construction include removal of all organic debris from the ground to a depth of 6 ft. The bank is graded, a process that can include removing several vertical feet of soil from the upper bankline at the bank face along the river. The revetment is laid, and riprap or concrete is placed on the upper bank to prevent erosion and undermining of the revetment. Both levee and revetment construction normally disturb the upper soil deposits and often destroy archeological sites (Goodwin, Hinks et al. 1989). Several revetment items exist within the project area, and the flood protection levee extends through the project reach.

The survey area encompasses portions of the Greenville Bend Revetment (River Miles 99.4-R to 98.3-R), all of the Gretna Bend Revetment (River Miles 98.2-R to 96.4-R), and the Gouldsboro Bend Revetment (River Miles 96.4-R to 95.5-R). All three projects originally were funded by the New Orleans Harbor Improvements, and included in project constructions approved in 1882. Work conducted on the Greenville Bend, Gretna Bend, and Gouldsboro Bend revetments after 1965 was funded through the Channel Improvement Project, under the authority of the Flood Control Act of 1965 (United States Army Corps of Engineers 1987).

The evolution of the modern day Greenville Bend Revetment began in 1890, when two spur dikes were constructed. Willow framed mats were placed along the revetment from 1908 to 1931. Asphalt mats were laid in 1934 and 1935. Since 1935, only minor repairs have been made to the revetment. These include repairs resulting from ship damage, and the deposition of riprap in quickly eroding areas (United States Army Corps of Engineers 1987).

The Gretna Bend Revetment was built from willow framed mats in three stages in 1911, 1912, and 1920. Some asphalt was laid down in 1950 and in 1960; however, the area has received only minor repairs during the last 46 years. These repairs included some paving and the placing of additional riprap (United States Army Corps of Engineers 1987).

Work carried out in 1885 resulted in the construction of three spur dikes in the Gouldsboro Bend Revetment area. Additional spur dikes were constructed in 1887 and 1888. Willow framed mats first were used at Gouldsboro Bend in 1906. Additional matting was laid in 1907, 1911, 1920, 1924, 1929, and 1931. Gaps located between the spurs were closed permanently in 1916 and 1920; asphalt mats were positioned in 1935, 1936, and 1937. Since 1940, only minor repairs have been made to the revetment item (United States Army Corps of Engineers 1987).

A classic example of destruction due to construction combined with demolition by neglect took place at Harvey's Castle, a gothic mansion built prior to 1848 in the vicinity of the Harvey Canal. Swanson (1975) wrote that the house was said to contain 11 rooms, including a spacious hall with twin walnut staircases, marble mantels, and other interior decorative features. The Harvey family resided in the residence until about 1870. Beginning in 1874, Harvey's Castle served as the Jefferson Parish Courthouse. The police jury contracted to pay Harvey \$600 annually to use the facility providing he kept it in good repair. The building continued to be used as a courthouse until 1884. After 1884, the building fell into disrepair, and became a tenement, housing poor tenants and, it is said, pigs. The Gothic Revival style mansion was demolished in 1924 to permit the widening of the Harvey Canal (Jefferson Parish Planning Department 1981; Swanson 1975).

Fluvial and geomorphological processes, industrialization, construction, and neglect interact to alter the quality of the archeological data base within the project reach. While a portion of the data base has been lost to the river and to construction activities, a portion of this data base remains intact, scattered throughout the batture, the tanker farms, and parks that line the river. The remainder of this report identifies these resources, their associated histories, and steps that must be taken to preserve these resources as they exist within the project area.

CHAPTER III

PREVIOUS INVESTIGATIONS

Previous Archeological Investigations

Previous investigations in the immediate project area failed to locate significant archeological resources. Rivet (1975) conducted an archeological survey of the proposed U.S. 90 Harvey Canal Bridge; this study included an intensive pedestrian survey, but no archeological sites were recorded. Several years later, the University of New Orleans directed archeological excavations for the Louisiana Department of Transportation and Development at the site of the second span of the Greater New Orleans Bridge (Beavers and Lamb 1980). These excavations sampled a portion of Block 74 in McDonoghville to assess its archeological significance. Archeological and historical evidence suggested that Block 74 was occupied continually from the very late nineteenth century by "a blue collar socio-economic class" (Beavers and Lamb 1980:146). Most of the artifacts dated from the twentieth century. No evidence of significant archeological resources was encountered; therefore, the site was not recommended for nomination to the National Register of Historic Places.

Near the project area under consideration here, a number of studies and inventories have documented both archeological sites and historic standing structures. During October 1983, the National Park Service performed an archeological survey of the River Miles 110 to 104.5 for the United States Army Corps of Engineers, New Orleans District (Shafer et al. 1984). Although this study was not completed, eight standing structures and one historic site were recorded. Four of the eight standing structures were considered potentially significant: the ca. 1915 Export Oil Company office building, the Tchoupitoulas Plantation House, the Derbigny Plantation House, and the Magnolia Lane Plantation House. The latter was placed on the National Register in 1986 for architectural significance. One historic archeological site, 16JE143, was part of Avondale Plantation; limited testing recovered ceramics, pieces of glass, and fragments of brick and slate. Further investigations were recommended to define the nature, integrity, and condition of the site.

During 1983 and 1984, R. Christopher Goodwin & Associates, Inc. conducted a comprehensive archeological and historic sites inventory of Jefferson Parish (Goodwin, Yakubik et al. 1985). The status and significance of all known archeological and historic sites in the parish, except those contained within Jean Lafitte National Historical Park, were described and evaluated. Ten major types or classes of historic sites were identified: plantations, sawmills, brickyards, cemeteries, fortifications, platform villages, ferries, transportation routes, ethnic communities, and contact period sites. The inventory also assessed the cultural affiliation, status, type, and nature of current impacts for all known prehistoric sites in Jefferson Parish.

During 1985 and 1986, R. Christopher Goodwin & Associates, Inc. conducted an archeological survey on the westbank of the Mississippi River in Jefferson Parish from Westwego to near Gretna (River Miles 111.0-R to 95.0-R) (Goodwin, Armstrong et al. 1990). This survey was undertaken for the United States Army Corps of Engineers, New Orleans District, prior to planned levee improvement and revetment construction. Two historic archeological sites were located and evaluated during the study. One site, Bridge City-9 (16JE143), consisted of archeological remains from Avondale Plantation that had been identified previously by the National Park Service (Shafer et al. 1984). These investigations found the remains highly disturbed. In addition, the sparse artifactual assemblage lacked contextual integrity. Archeological remains on a small portion of Magnolia Lane Plantation (16JE156) were tested and found to be the remnants of structures dating from the late nineteenth and early twentieth centuries. The archeological deposits were highly disturbed except for a concrete foundation that probably supported a church steeple. Neither 16JE143 nor 16JE156 possessed significant research potential or site integrity. In addition, 18 standing structures were recorded and evaluated; none of these were significant architectural resources.

Only one other recorded historic site exists near the project area. This site, the Seven Oaks Plantation (16JE139) at river mile 102.1-R, is located within a tank farm. Deposits from this site have not been evaluated archeologically.

National Register of Historic Places Properties

Four National Register properties and one historic district are located near the project area. Information about these was obtained from the completed National Register of Historic Places Nomination Forms on file at the Louisiana Division of Historic Preservation, Baton Rouge, which were prepared by Mary G. Curry of the Jefferson Parish Government. These are summarized in Table 2. The old Jefferson Parish Courthouse is a three-story, brick structure with concrete trim located in the old central business district in Gretna. Constructed in 1907, this Renaissance style building has a large, two-story Baroque courtroom. Although the interior has been modified extensively, the exterior of this building is nearly intact.

The David Crockett Fire Company Gould #31 Pumper and Fire Hall is located in Gretna. The pumper was manufactured in 1876 by the R. Gould Company of Newark, New Jersey, and it was purchased that same year by the David Crockett Fire Company. The pumper was used until 1928; it has been maintained by the fire company ever since. It is a significant resource in that it is one of a very few surviving pre-1880 fire engines and it is housed in the fire hall where it was used. The Gretna Fire Company, organized in 1841, may be the oldest continuously active volunteer fire company in the United States. The fire hall was built in 1859; although the building has been modified several times, approximately 75 per cent of the structure is original (Curry 1986:58).

The St. Joseph Church-Convent of the Most Holy Sacrament Complex in Gretna includes two significant structures. The Convent/Boarding School is a three-story, brick building constructed in 1899; an extension was added in 1907. It is one of the finest surviving examples of turn-of-the-century commercial vernacular architecture in Jefferson Parish. The church, built in 1926, is covered with Spanish baroque details including elaborately scalloped doorways, Persian columns, composite columns with decorated shafts, statues in niches, multiple scroll volutes, urns, undulating architraves, and decoratively sculpted oeil-de-boeuf motifs (Curry 1986:63).

The Gretna Historic District contains 737 structures. It encompasses all or part of 53 blocks. This historic district is predominantly residential, although there is a commercial section located near the Mississippi River. The contributing elements consist of 553 buildings constructed ca. 1845-1935, including Creole cottages, shotgun houses, bungalows, commercial buildings, and local landmarks (Curry 1986:80-87).

The Magnolia Lane Plantation House is located near Westwego. Built ca. 1830, it is a Greek Revival plantation house with some Federal details. Even though 16JE156 is located on the Magnolia Lane Plantation property, it is not a significant archeological resource (Goodwin, Armstrong et al. 1990) nor is it located within the part of the plantation that is included on the National Register of Historic Places.

Four of the National Register properties located near the project area are within the town of Gretna. The fifth, Magnolia Lane Plantation House, is approximately six miles upriver from the project area. All five properties were included in the National Register because of their architectural significance; no associated archeological deposits were evaluated. None of these properties lie within the project area, and none will be affected adversely by the proposed construction.

Table 2

NATIONAL REGISTER OF HISTORIC PLACES PROPERTIES NEAR THE PROJECT AREA¹

<u>Name</u>	<u>Description</u>	<u>Location</u>	<u>Date Listed</u>
Old Jefferson Parish Courthouse	1907 Renaissance and Baroque style courthouse.	200 Henry P. Long Avenue, Gretna	January 21, 1983
David Crockett Fire Company Gould #31 Pumper and Fire Hall	1876 Fire engine, in original setting; 1859 Fire Hall.	205 Lafayette Street, Gretna	January 27, 1983
St. Joseph Church, Convent of the Most Holy Sacrament Complex	1899 and 1907 Convent and boarding school; 1926 Spanish Baroque church.	Intersection of Lavousier and Seventh Streets, Gretna	March 15, 1983
Gretna Historic District	ca. 1845-1935 Residential and commercial district, several significant local architectural styles represented, especially for the late nineteenth/early twentieth century.	Roughly bounded by First Street, Amelia Street, Ninth Street, Gulf Drive, Fourth Street, and Huey P. Long Avenue, Gretna	May 2, 1985
Magnolia Lane Plantation House	ca. 1830 Greek revival plantation house, some Federal details.	Highway 541 at Nine Mile Point, near Westwego	February 13, 1986.

¹ Data from the National Register of Historic Places Inventory Nomination forms, on file at the Louisiana Division of Historic Preservation, Department of Culture, Recreation and Tourism, Baton Rouge.

CHAPTER IV

ECONOMIC HISTORY OF THE PROJECT AREA

Introduction

No prehistoric remains whatsoever were encountered during archeological survey. Therefore, the prehistory of the larger region is not reviewed here. A prehistoric overview of the project region may be found in Goodwin, Armstrong et al. 1990.

Like their prehistoric predecessors, historic settlers occupied land along major waterways. The French colonists recognized the geographic and environmental advantages of settling along the west bank of the Mississippi River in Jefferson Parish. They cut forest, drained land, dug canals, and built agricultural communities along the river. During the eighteenth and early nineteenth centuries, the landscape surrounding New Orleans consisted mostly of large agricultural tracts owned by planters, and, to a lesser degree, of smaller tracts owned by "petite habitants" and freed slaves. The economic vitality of the region centered on the proximity of timber, canals, sawmills, and brickyards to the expanding City of New Orleans. Settlements began to spread across the river in the early nineteenth century; for example, the westbank town of McDonoghville was established in 1815, followed by Gretna in 1836. During the antebellum period, the inhabitants of the project area used steam technology to expand the colonial lumbering, shipping, and brickmaking industries. After the Civil War, the growing commercial activity at the port of New Orleans increased thereby enhancing the value of riverfront property within the study area. The lumbering and brickmaking industries continued into the late nineteenth century, and transportation and shipping businesses expanded greatly; railroad companies, warehouses, wharves, freight yards, and canals and locks, became important parts of the economic landscape. Industrial activity in the project area increased during the early twentieth century and continues to play an important role in the development of modern day Gretna, Harvey, and Algiers.

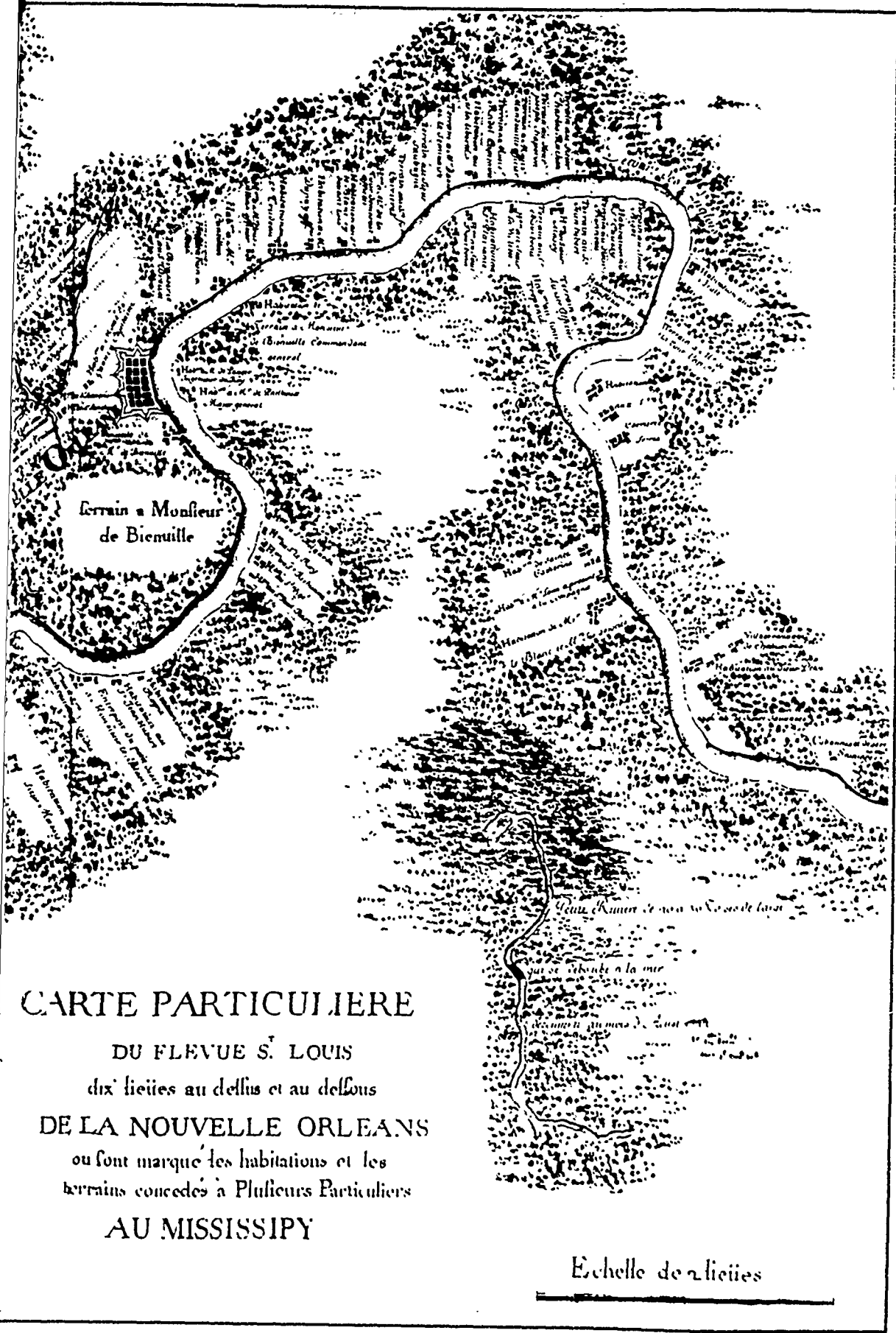
The Colonial Period 1718-1800

The first historic settlements in the project area were the result of French agricultural concessions. Between 1718 and 1732, private monopolies such as the Company of the West, and the Company of the Indies, sold large tracts of land in lower Louisiana for the French crown. The land along the Mississippi River was prime property. These areas provided an optimum setting for agronomic development; the higher ground of the natural levee was suitable for domestic locales, crops grew well in the fertile alluvial soil, and the low-lying backswamp provided ample timber and drainage. A 1723 map depicts the Mississippi River concessions near New Orleans (Figure 7). Early census records (1721, 1723, 1727, and 1731) show that the area was practically uninhabited during the early years of the French colonial period. The area between Nine Mile Point and Algiers Point on the westbank developed slowly during the eighteenth century. During the French regime, there were two major landowners in the study area. Before 1730, Claude Joseph Villars Durbreuil claimed 16 arpents front on the Mississippi River in the area between present day Harvey and Gretna; the Chavaller Pradel owned 20 arpents front in the McDonoghville area (Bezou 1986:v). Throughout the remainder of the French period, the descendants of Durbreuil and Pradel owned most of the land within the study area. The 1770 Spanish census reported only isolated westbank "farms." Some of the property owners during the Spanish period included the Durbreuil heirs, Bouligny, Piquery, Derbigny, Delisle, Carlier, Dugruise (or Dugruy), Mayronne, and the Ursuline nuns.

Timber, livestock, indigo, rice, vegetables, tobacco, wax myrtle, furs, game, and fish were the major products produced by the colonists. Historic documents show that canals provided drainage and water for the operation of sawmills and brick kilns. By 1800, sawmills and brick kilns lined four major canals along the westbank between present day Westwego and Gretna: the Durbreuil or Gardere Canal, the Barataria or Company Canal, the initial Destrehan Canal, and the Derbigny Canal.



Figure 7. *Carte Particuliere du Fleuve St. Louis*, circa 1723 showing concessions along the Mississ River (Edward E. Ayer Collection, Newberry Library, Chicago).



CARTE PARTICULIERE

DU FLEUVE S. LOUIS

dix lieues au dessus et au dessous

DE LA NOUVELLE ORLEANS

ou sont marquees les habitations et les
terrains concedes à Plusieurs Particuliers

AU MISSISSIPY

Echelle de lieues

Ranching was a major occupation on westbank properties during the eighteenth century, more so than on the more populated eastbank concessions. For example, a Mr. Destrean [sic] reportedly not only maintained his 14 arpent front farm but also owned 140 head of cattle (Robichaux 1973:237). Other domesticated livestock raised on westbank farms included horses, oxen, hogs, chickens, turkeys, geese, and ducks.

By the 1740s, indigo emerged as the most important agricultural cash crop in southern Louisiana (Table 3). Indigo production was unpleasant labor, and as a result, most indigo plantations used slaves to process the harvest. Indigo planters believed that the odor from making indigo dye attracted disease carrying insects and that the byproducts polluted nearby streams. Consequently, the indigo making facilities were constructed away from the residential areas (Holmes 1967:344). By 1790, the lower price of indigo imported from India combined with increased insect infestation, crippled the local indigo industry. By the early nineteenth century, indigo no longer served as an important cash crop along the westbank.

Early Canals, Sawmills, and Brickyards

The first task facing early settlers of the westbank was the removal of the thick stands of cypress trees (*Taxodium distichum*) so that the land could be cleared and cultivated. As African slave labor became increasingly available, the more affluent concessionaires built canals perpendicular to the Mississippi River to remove the felled trees; later, sawmills and brickyards were constructed along the canals. Although few historic maps from the colonial eighteenth century show the locations of these canals, there are ample archival data documenting the existence of these features.

The first major westbank canal was constructed in the 1730s by Claude Joseph Villars Dubreuil. Dubreuil built the canal known today as the Gardere Canal in east Harvey. A portion of the main canal still exists as the northern end of the Gardere Canal near Fairmont Street in Harvey (Figure 1). Dubreuil's canal connected the Mississippi River with Bayou Barataria; it was the first Mississippi River canal that provided direct access to the Gulf of Mexico. Dubreuil's Canal was used to float Barataria Basin cypress and oak timber and to transport clam shells for making lime (Dart 1935:267-778; Holmes 1986:50). A shorter sawmill canal was dug adjacent (downriver) to the Dubreuil Canal. In 1772, Mr. Dubreuil, Jr., sold the 16 arpent estate and canals to Don Francisco Bouligny. According to the 1773 Records of the Cabildo, the structures located near the canals included a sawmill, a carpenter shop, a blacksmith shop, a 160 ft warehouse, a straw loft, and two brick kilns. The two canals are depicted on LaTour's 1815 map (Figure 8). During the late Spanish period and early American occupation (1785-1815), the larger Dubreuil Canal played a major role in the smuggling activities of Jean Lafitte and his corsairs. During the War of 1812, the Dubreuil Canal served as a strategic waterway for transporting men and supplies.

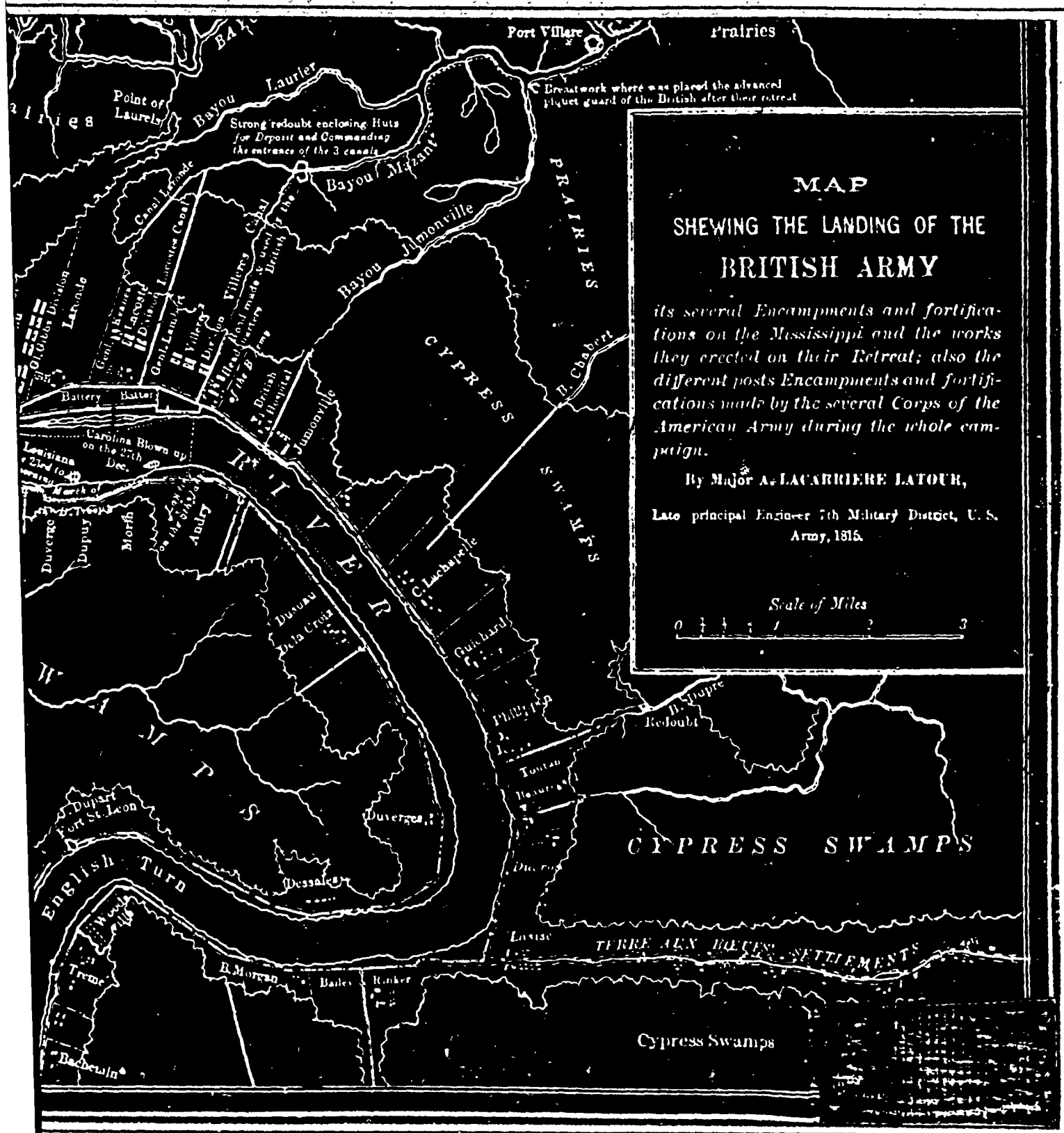
The 1819 Bouchon plan (Figure 9) shows the larger Dubreuil Canal, a sawmill, a brick kiln, a sugar house, and a residential structure along the upriver side of the canal. Antoine and Zenon Foucher owned the canal during the early nineteenth century and expanded both the sawmill and brickyard. Zimpel's survey map shows both canals, each with a sawmill (Figure 2). In the 1840s, the canals and sawmills were acquired by Fergus Gardere, who improved the sawmills by adding steam-powered machinery. In 1836, Joseph Nelson LaBarre and Valcour LaBarre purchased the large brickyard located downriver from these canals. Gardere and the LaBarres made substantial profits from the sawmills and brickyard before the Civil War (Reeves 1980:108).

The Barataria or Company Canal is located upriver from the study corridor. It was integral to the economic development of the westbank area below Nine Mile Point. Claude Joseph Dubreuil, Jr., dug the Barataria Canal circa 1760 near the modern town of Westwego to connect the Mississippi River with Bayou Segnette and Barataria Bay. During the nineteenth century, the canal became known as the Company Canal because local property owners cooperated to enlarge the canal and connect it to Bayou Lafouche; this canal was filled in during the 1930s. A detailed history of the Company Canal is included in Goodwin, Armstrong et al. 1990.

Table 3

RECAPITULATION OF FARM PRODUCTION TAKEN DURING 1766 CENSUS
FOR LANDS CULTIVATED NEAR NEW ORLEANS (AFTER ROBICHAUX 1973)

<u>Crop</u>	<u>Tons</u>
Rice (riz en paille)	1909
Maize	2068
Indigo	18500
Sugar	3000
<u>Farm Animals</u>	<u>No.</u>
Horses (saddle and colts)	305
Oxen	188
Cows (milking)	934
Young heifers and bulls	2125
Sheep	1660
Hogs	466



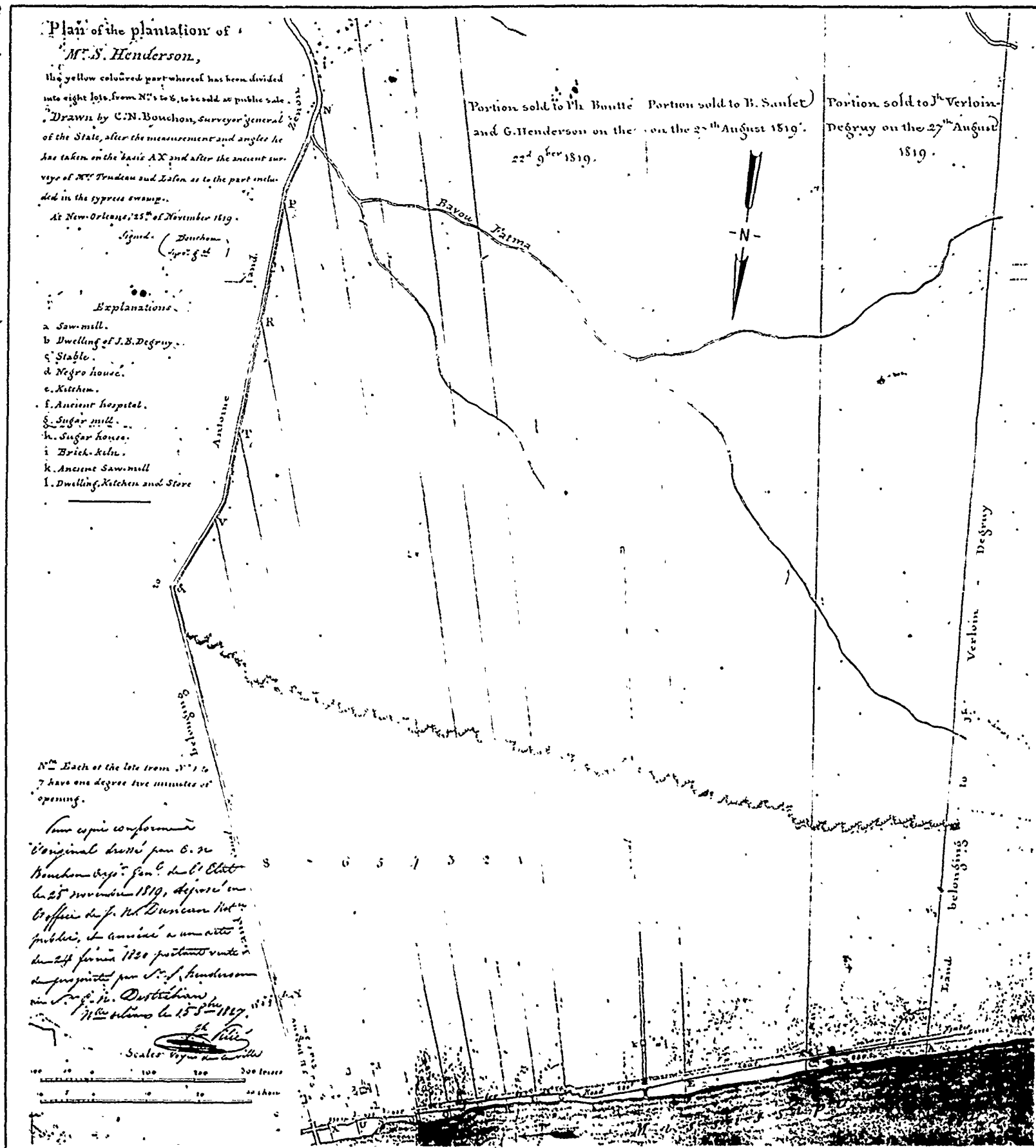


Figure 9. Plan by C. N. Bouchon showing subdivision of Henderson property dated November 25, 1819
(Courtesy Harvey Canal Limited Partnership).

A drainage canal, known as the old Destrehan Canal, and a sawmill were constructed between the Company Canal and the present-day Harvey Canal. This canal, shown on LaTour's 1815 map, was situated on Mayronne's property (Figure 8). Although the canal does not appear on post 1840 historic maps, the remains of this canal still are evident landward of Highway 18 and appear on the recent USGS 7.5' quadrangle (Figure 1). The canal and sawmill are detailed in a survey plan by C. N. Bouchon, dated November 25, 1819, performed before subdivision of the property by the owner, Stephen Henderson (Figure 9). On Bouchon's plan, the sawmill was labeled "ancient sawmill," implying that it was constructed during the colonial decades. Three structures labeled "I" are marked as a "kitchen dwelling and store" and are drawn along the upriver side of the canal. Nicholas Noel Destrehan purchased this property from his brother-in-law, Stephen Henderson, in 1825. Destrehan added residential structures and gardens to the property. The 1834 Zimpel map (Figure 2) shows the location of the canal, the residential structures, and the gardens. The Zimpel map does not show the sawmill, but does show a brickyard downriver from the canal. Springbett and Pillie's 1839 map (Figure 4) shows a similar arrangement with some improvements to the domicile/gardens area directly upriver from the canal. According to James L. Furman, who worked on the Destrehan estate in 1846 as a tutor, the Destrehan property included a huge canal (Harvey Canal), extensive gardens, a wood yard, a dairy, and a brickyard. In describing the brickyard, Furman stated that it was "oft a scene of activity and revenue" (Furman 1904:56).

The succession of Destrehan in 1849 included a subdivision of the estate. Among the persons who purchased lots were Charles and William P. Bobb. The Bobb brothers, who were brickmakers, purchased lots 8 and 9, towards the upriver end of the Destrehan estate (Acts of L. R. Kenny, N.O. Notarial Archives). The sale does not mention structures or the canal; however, it does refer to two survey plans:

...a certain tract of land situated in the parish of Jefferson on the right bank of the river Mississippi, said tract of land measuring 750 ft front of the Public Road and extending in depth on both side lines 500 ft and measuring 750 ft in width in the rear bounded on the upper side by a street 30 ft wide separating it from the property belonging still to said vendor, agreeably to a plan drawn by Caleb Forshey dated 1/4/1849 and deposited in the office of said notary; said tract is part of two tracts of land designated by the numbers 8 and 9 on a plan of subdivision of the plantation of L.H. Destrehan made by Benjamin Buisson dated 10/24/1848 and deposited in the Office of said notary (Acts of L. R. Kenny 1849, N.O. Notarial Archives).

Figure 10 is a copy of the 1849 Buisson plan showing the subdivision lots of the Destrehan property above the Harvey Canal. No appurtenances or structures were included in the Buisson survey plan.

Charles P. Bobb is listed in the *New Orleans Directory for 1842* as "Bouligny's brick maker" (*Directory of New Orleans* 1842:38); Bouligny owned a plantation farther downriver. There is no mention of Bobb in subsequent editions of the *New Orleans Directory* until 1856. In *Cohen's New Orleans Directory for 1856*, the listing states: "Bobb, Charles, brickmaker and sawmills, Gretna" (Cohen 1856:33). William Bobb is listed the same way. Both Charles and William Bobb were listed as Gretna brickmakers and sawmill operators until 1860, when the two were listed as having separate facilities. In *Gardener's New Orleans Directory for the Years 1860, 1861*, the listings state: "Bobb, Charles, brickmaker above Gretna"; and, "Bobb, Wm, brickmaker and sawmill, Gretna" (Gardener 1860:58; 1861:65). Charles P. Bobb may have maintained the brickyard above the Harvey Canal after 1860, while William operated a brickyard and sawmill downriver and closer to the city of Gretna. The Bobbs were not listed after 1861. The 1863 Banks map marks the location of Bobb's Brickyard as upriver from the Harvey Canal (Figure 6). The map data and land sale records showing the purchase of the property by the Bobbs in 1849, confirm that Bobb's Brickyard could not be the Destrehan brickyard shown on Zimpel's 1834 plan (Figure 2).

Between 1839 and 1845, Nicholas Noel Destrehan constructed a larger canal downriver from the old Destrehan Canal. Originally called the Destrehan Canal, and later known as the Harvey Canal, it was described in Destrehan's 1849 succession as: "a navigable canal about five miles long commencing at about 200 yards from the Mississippi and falling into said River or Bayou Ouchas" (Acts of L. R. Kenney,

1849, Orleans Parish Courthouse). This large canal was a more direct route to Bayou Barataria than the older Dubreuil (Gardere) Canal (Figure 11). In 1846, Destrehan's daughter Louisa and her husband, Joseph Hale Harvey, purchased the property and canal. In 1848, the Harveys established another brickyard along the downriver side of the Harvey Canal. This brickyard was maintained by the Harvey family until at least 1896. Figure 12 shows the location of the three historic brickyards in the Harvey Canal area. In 1853, the "Harvey Canal was greatly enlarged both as to width and depth" (Clark and Hofeline 1881:3). The Harvey Canal is discussed in detail in the Postbellum Period section of this chapter.

Downriver from the Dubreuil (or Gardere) Canal, a smaller canal with associated sawmill and brickyard was constructed during the eighteenth century. It is uncertain who originally built this canal, although it was situated on the upper side of Bouligny's 20 arpent property. Bouligny sold his 20 arpents to Baustista Degruise and Francisco (Francois) Mayronne in 1792. Charles Derbigny and Barthelemy LeBreton purchased 12 arpents of the 20 arpents front tract including the canal from Pierre Ste. Pe in 1815 (Bezou 1986:vi). The 1815 LaTour map shows this canal on the Derbigny property (Figure 8). The 1834 Zimpel plan (Figure 2) shows the canal with associated sawmill and brickyard with L. Faures as the owner. The previously mentioned LaBarre brothers, Joseph Nelson and Valcour, purchased this canal property in 1836. They improved the steam sawmill, and together with their upriver neighbor, Gardere, produced most of the lumber for the new town of Gretna, as well as for the expanding City of New Orleans (Reeves 1980:104,105). The 1966 USGS New Orleans East 7.5 minute quadrangle map shows this canal upriver from Manhattan Street in east Harvey (Figure 1).

The Antebellum Period 1800-1860

The nineteenth century in south Louisiana was a time of considerable socioeconomic and geopolitical change. The arrival of the new United States government coincided with major changes in the plantation economy. The discovery that sugar agriculture was profitable on a large scale prompted the planters to abandon their failing indigo crops in favor of sugar cane. The westbank planters followed this pattern. Bouchon's 1819 plan shows a circular sugarhouse upriver from the Gardere Canal, then the property of Antoine and Zenon Foucher (Figure 9). The 1819 date suggests that sugar cane agriculture occurred earlier along the westbank than in other areas. Most Louisiana planters did not grow cane until the late 1820s and early 1830s (Begnaud 1980:30). The Zimpel plan shows that the sugar industry was well established in the project area by 1834, with numerous sugarhouses along the river (Figure 2). The circular shape of the Foucher sugarhouse indicates pre-steam engine technology; the round structure allowed draft animals (oxen and mules) to turn the mill to grind the cane. The sugarhouse shown on the Foucher property on the Bouchon and Zimpel maps may be one of the oldest on record in Louisiana. During the eighteenth century, Claude Joseph Dubreuil and his descendants owned this land and dug the canal. During the 1740s, Dubreuil was the first Louisiana colonist to grow sugar cane successfully, to construct a sugar mill, and to granulate the cane into raw sugar at his plantation located directly upriver from the New Orleans City fortifications (Gardeur 1980:5; Goodwin, Armstrong et al. 1987:154).

There were three large antebellum sugar plantations within the study boundaries that operated sugarhouses: the J. Verloin Degruy plantation, the Nicholas Noel Destrehan plantation, and the A. Foucher Jr. plantation. Zimpel's plan shows both the properties and sugarhouses (Figure 2). Although sugar agriculture was a major industry of the westbank throughout the remainder of the antebellum nineteenth century, other traditional extractive industries such as lumbering, shipping, brickmaking, and even truck farming also were important. James L. Furman, who was a tutor in residence at the Destrehan estate in 1846 stated:

But for some reasons the present proprietor (Destrehan) gave up the sugar crop and devoted his talents and energies and the labors of his servants to other industries (Furman 1904:54).

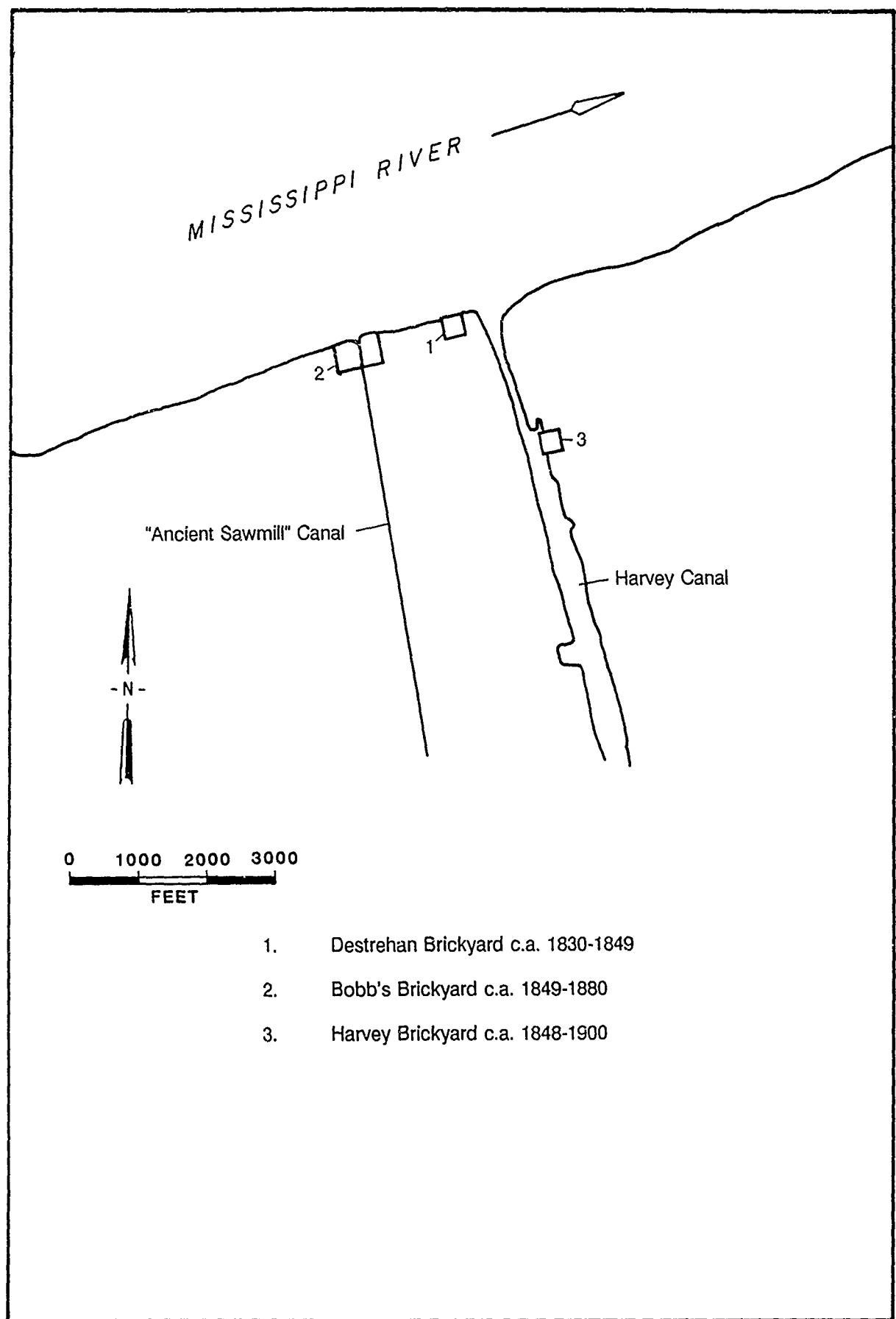


Figure 12. Historic Brickyards in the vicinity of the Harvey Canal.

Between 1813 and 1850, the plantations along the study area were subdivided; these subdivisions eventually developed into residential communities. The economy of the new towns established along the study corridor of the Mississippi River, namely McDonoghville, Mechanicsham, Gretna, and Harvey, was based on shipping and building contracting and related industries, and on truck farming.

McDonoghville

Philanthropist John McDonogh purchased and subdivided the Bernoudy plantation in 1813. He established the village of McDonoghville which offered private land ownership in two-acre lots for \$3,000.00 each, creating a residential area for working class people and free slaves. J. V. Poiter developed a proposed plan of Macdonogh (sic) in 1814. A copy of this plan, reproduced in 1914 at the Clerk of Court's Office in Gretna, is shown in Figure 13. The proposed canal in the subdivision never was built. Zimpel's 1834 plan and an 1840 plan of *Gardener's Directory*, illustrate the layout of McDonoghville (Figures 2 and 14). Later historic maps of McDonoghville contain various names for the area; "Freetown" was used for the section of McDonoghville where the free persons of color resided, and "Gouldsborough" was named after Jay Gould, who built a railroad terminal near there in the 1880s. McDonoghville offered private land ownership in a rural setting separated from urban New Orleans. The 1848 *Directory of New Orleans* lists more than 40 different occupations for the people of McDonoghville. Among the most often cited occupations were carpenters and laborers.

McDonoghville is positioned between Gretna and Algiers Point. Severe bankline loss has occurred along the McDonoghville riverfront since 1800; some of the original riverfront blocks of McDonoghville, including the great house of McDonogh, Monplaisir (built in 1750 for Pradel), were lost to the river. Besides Monplaisir, the other important historic structure of McDonoghville was the United States Marine Hospital. This huge brick building, constructed in the late 1830s near Bringier Street, was confiscated by Confederate troops in 1861 and used as a powder magazine. It was destroyed in December 1861 when powder stored there exploded. Most of the structures in McDonoghville were simple residential cottages. The oldest remaining houses in McDonoghville are from the mid-nineteenth century. The huge profits made by John McDonogh in creating his subdivision did not go unnoticed by other westbank property owners. Nicholas Noel Destrehan followed McDonogh's lead by subdividing his property to sell as residential lots. This subdivision became the town of Gretna (Swanson 1975).

Gretna

The town of Gretna was established less than a mile upriver from McDonoghville. In 1835, Nicholas Noel Destrehan contracted Jefferson Parish surveyor Benjamin Buisson to draw up a residential subdivision known as "Mechanikham" or "Mechanicsham" for his five arpent downriver property. Destrehan's original two block wide Mechanicsham subdivision developed slowly in the late 1830s. James Vance reportedly acquired one of the first lots in 1835 (Reeves 1980:105). In 1838, the property immediately downriver was subdivided. Solomon High, President of the St. Mary's Market Steam Ferry Company, purchased this property from Destrehan and LeBreton. This property was the first area to be referred to as Gretna. High petitioned the Jefferson Parish Police Jury to construct a ferry line between the St. Mary's Market in the suburb of Lafayette and the newly formed lots of Gretna. In 1839, the first Gretna lots (two acres in size) were sold to individual property owners for approximately \$3,000.00 each (Curry 1986:4). By 1845, the *New Orleans Weekly Delta* described Gretna as:

...hundreds of houses, embracing not only comfortable and even elegant residences, but hotels, stores, manufactories and shops of all descriptions, besides steam mills, which supply this city and its vicinity, as well as every foreign market on the Gulf of Mexico, with lumber and shingles in large quantities (*New Orleans Weekly Delta* 1845).

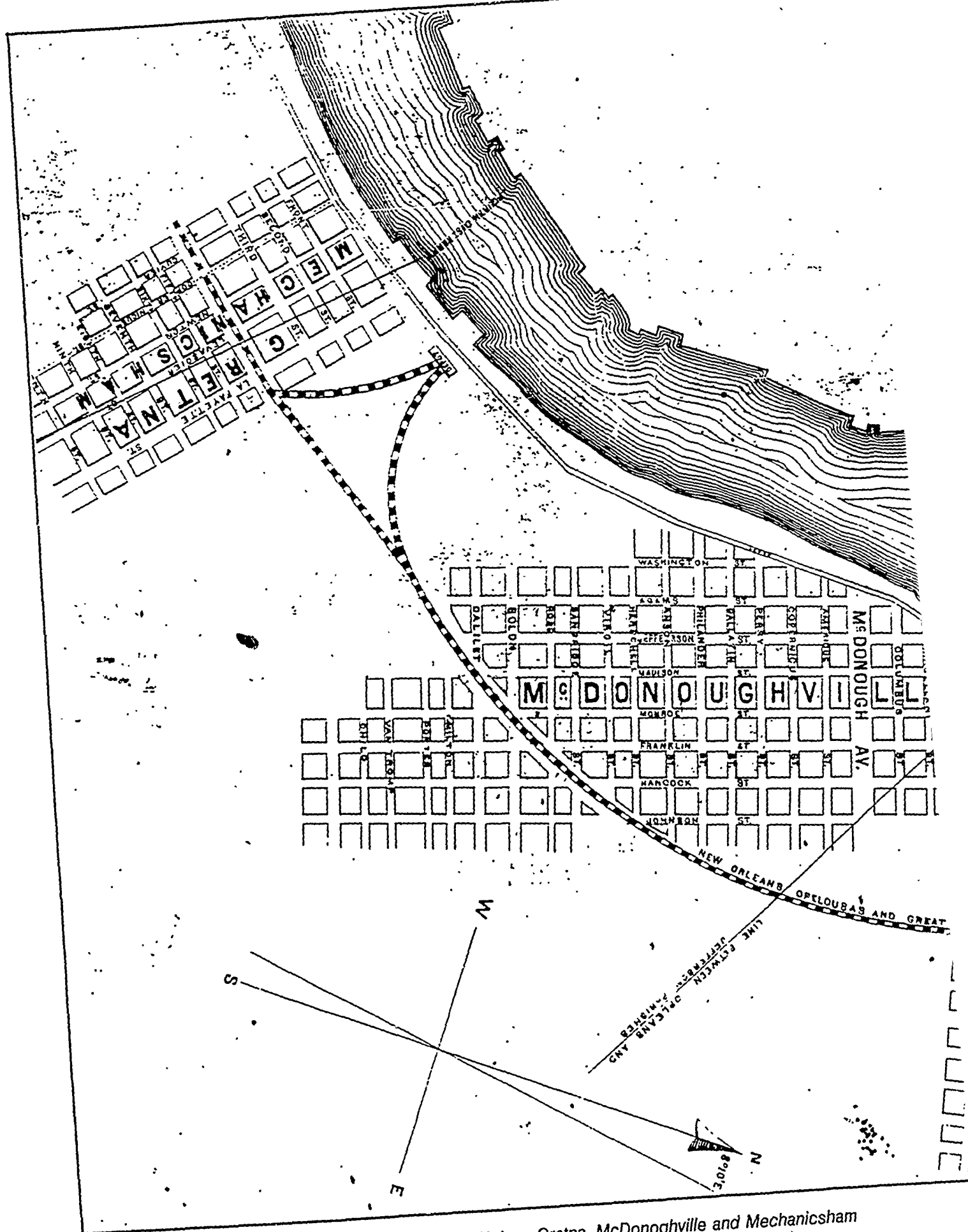


Figure 14. Excerpt from Gardener's 1840 Map of Algiers, Gretna, McDonoughville and Mechanicsham compiled for Gardener's Directory (Louisiana Collection, Tulane University Library).

MAP
OF
GARDNER'S GARDEN
McDONOUGHVILLE,
Mechanicsville
COMPILED FOR
GARDNER'S
DIRECTORY.

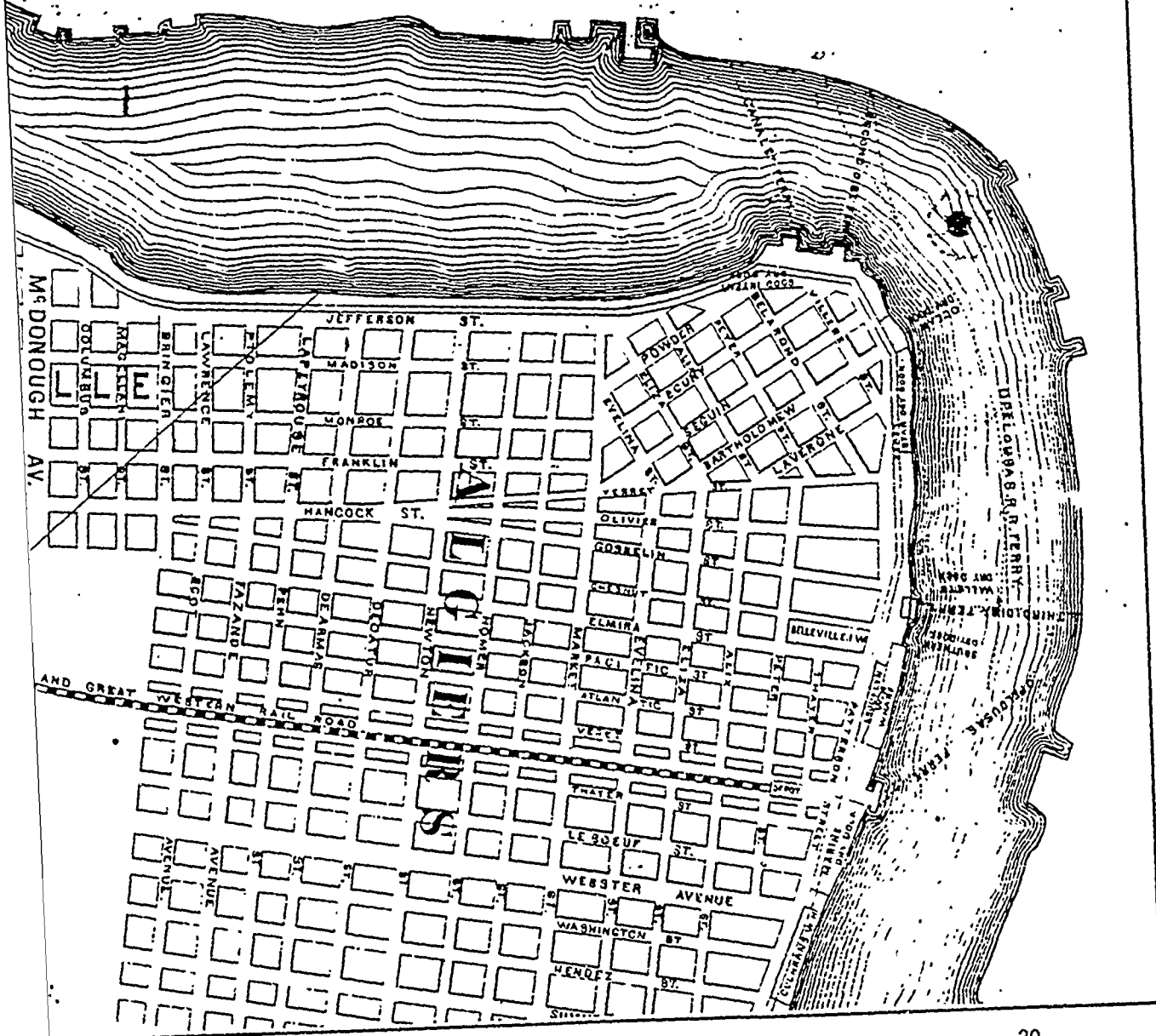


Figure 14 shows Gretna and Mechanicsham in 1840. Industrial facilities located in or near Gretna in 1845 included, besides the previously described sawmills and brickyards of Gardere and LaBarre, a large foundry, a carriage factory, and a steamboat plant. The LaBarre sawmill, located directly above the laid out streets of Gretna, was worked by 38 slaves, while the brickyard, situated further upriver, used 64 slaves (Reeves 1980:108). The October 1, 1850 succession of Joseph Nelson LaBarre, described the brickyard as having two kilns, sand beds, sheds, racks, stables, a dwelling house, Negro cabins, outhouses, and a kitchen (COB B, Folio 339, Jefferson Parish Courthouse). The LaBarres were influential in the development of the town of Gretna. Reeves states:

Valcour and Joseph Nelson LaBarre became pioneer developers of the town of Gretna. With their partner Gustave Leroy, they played an important role in the leadership of the community from the late 1830s onward (Reeves 1980:105).

The 1849 *Directory for New Orleans* listed 39 small businesses and occupations in Gretna including machinist, blacksmith, brick layer, painter, wheelwright, and carpenter. Most of the citizens were of German descent and settled in these new westbank towns to escape the increasingly crowded conditions of Faubourg Ste. Marie and Faubourg Marigny. Below the town of Gretna, another Destrehan subdivision, Harvey, was begun in 1839 and completed in 1848. Louise Destrehan Harvey purchased the land directly downriver from the Harvey Canal; this property became the town of Harvey.

Harvey

The town of Harvey was established around the canal of the same name. Although subdivision of the Harvey property began in the late 1850s, the land that was to become the city of Harvey did not become a suburban residential area until after the Civil War. Figure 15 depicts the Harvey area in 1867. As this *New Orleans City Directory* map indicates, the subdivision of the Harvey family property into smaller tracts occurred on the downriver side of the canal. Before the Civil War, the old Destrehan brickyard, directly upriver from the Harvey canal, was the first business in this area. Originally established by Nicholas Noel Destrehan in the 1830s (see Figure 2), this brickyard, which is not shown on later maps, may have been abandoned because of the establishment of two other brickyards in close proximity (Figures 6, 15, and 16). As previously stated, Bobb's Brickyard was established upriver from the Harvey Canal after 1849. Another brickyard was established by the Harveys along the downriver side of the canal during canal construction in 1848. The Harveys continued to operate this brickyard at least until 1896, when Louisa's son, Nicholas D. Harvey, leased the brickyard. This brickyard was located in back of the riverfront property; this property was owned by various truck farmers and then by Joseph Rathborne in 1888. Rathborne's Louisiana Cypress Company, the largest industry in the project reach from 1890 to 1920, stimulated settlement in the area. This community developed slowly, however. Contemporary historic maps and photographs of the area show only sparse clusters of residential areas. Figure 17 depicts the Harvey area downriver from the canal including the Louisiana Cypress Company facility ca. 1910. As this figure illustrates, this area between Harvey and Gretna was sparsely settled in the early part of the twentieth century, with truck farming dominating the landscape. Figure 18 is a photograph of the Harvey Canal area in 1934. The photograph shows the moderate development of the town of Harvey at that date.

The Civil War

The Civil War devastated the south's economy. Before the war, Louisiana ranked as the second wealthiest state in the nation; the state emerged from the War as the poorest of the southern states. Jefferson Parish was fortunate in that it escaped fighting on its soil, but the Parish was ruined financially.

Early in the war, Confederate troops confiscated all federal property including the United States Marine Hospital in McDonoghville. Patients were transferred to Charity Hospital in New Orleans and the hospital was converted to a powder magazine. The building was destroyed in December 1861 in an

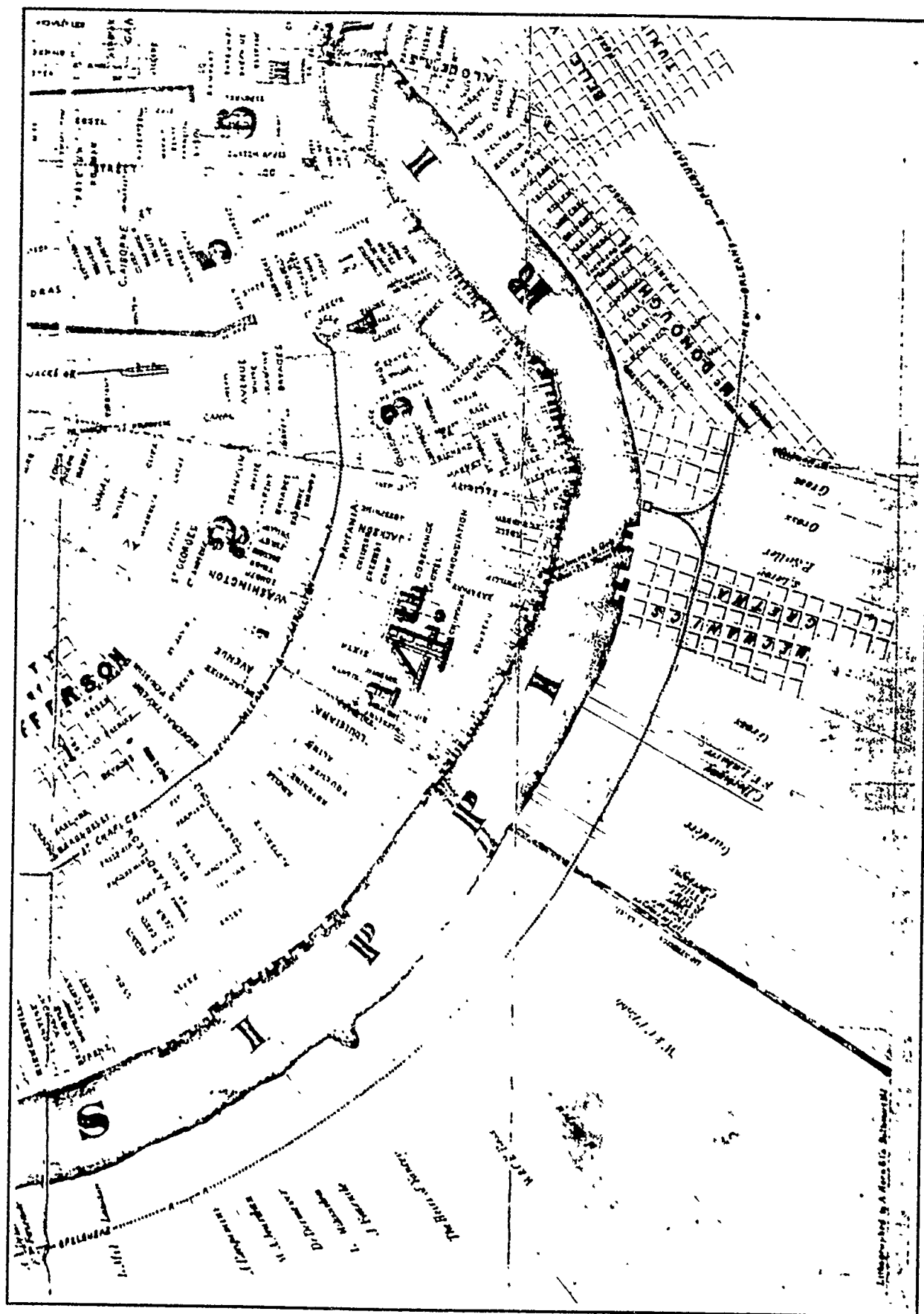


Figure 15. Excerpt from Map of the City and Environs of New Orleans prepared expressly for C. Gardener's City Directory for 1867 (Louisiana Collection, Tulane University Library).

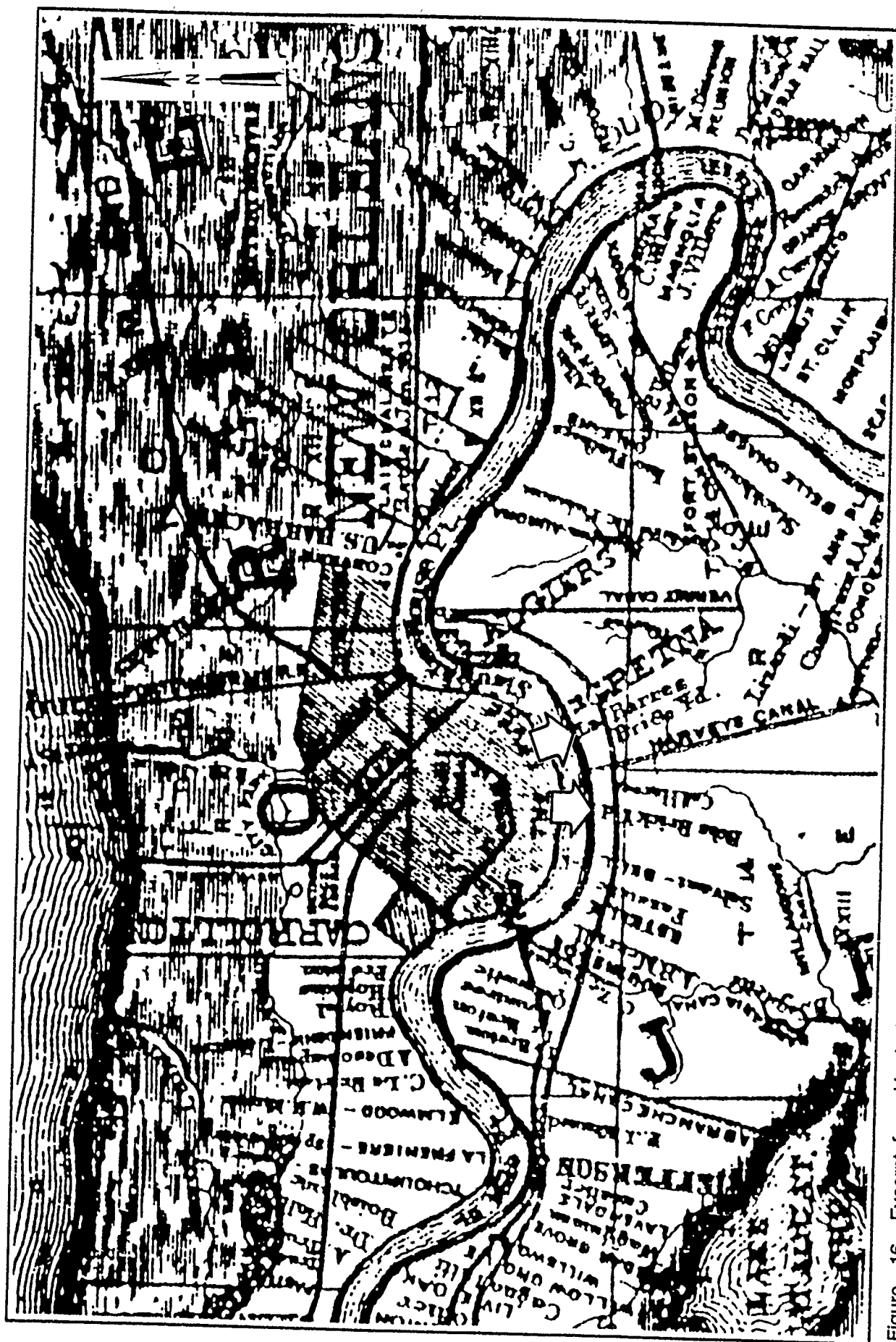


Figure 16. Excerpt from Hardee's 1877 *Official Map of Louisiana*, showing the location of Bobb's Brickyard, and the Labarre Brickyard (Map Division, Library of Congress).

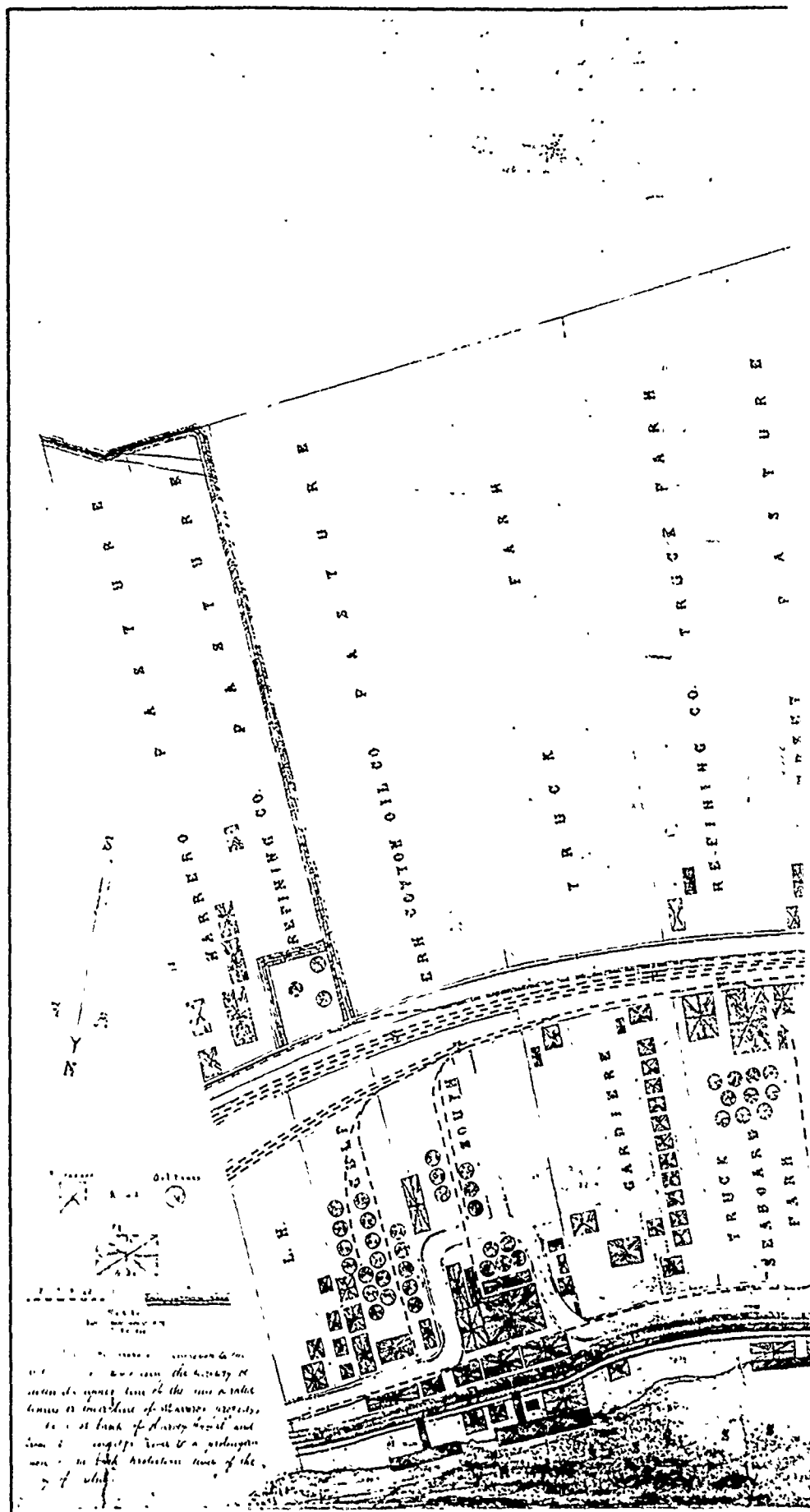
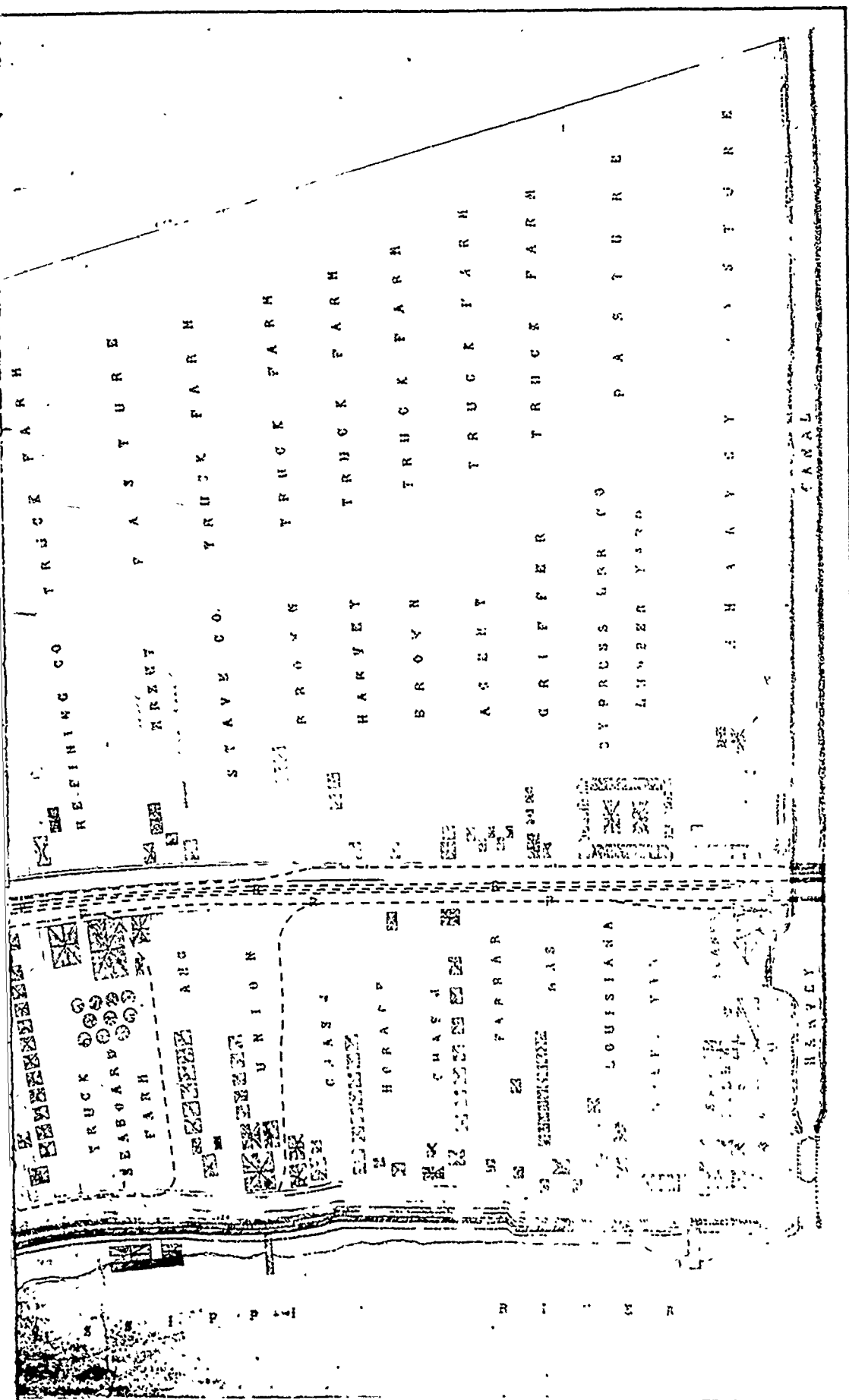


Figure 17. Map circa 1910 showing riverfront property between the Harvey Canal Center for Regional Studies, Southeastern Louisiana University).



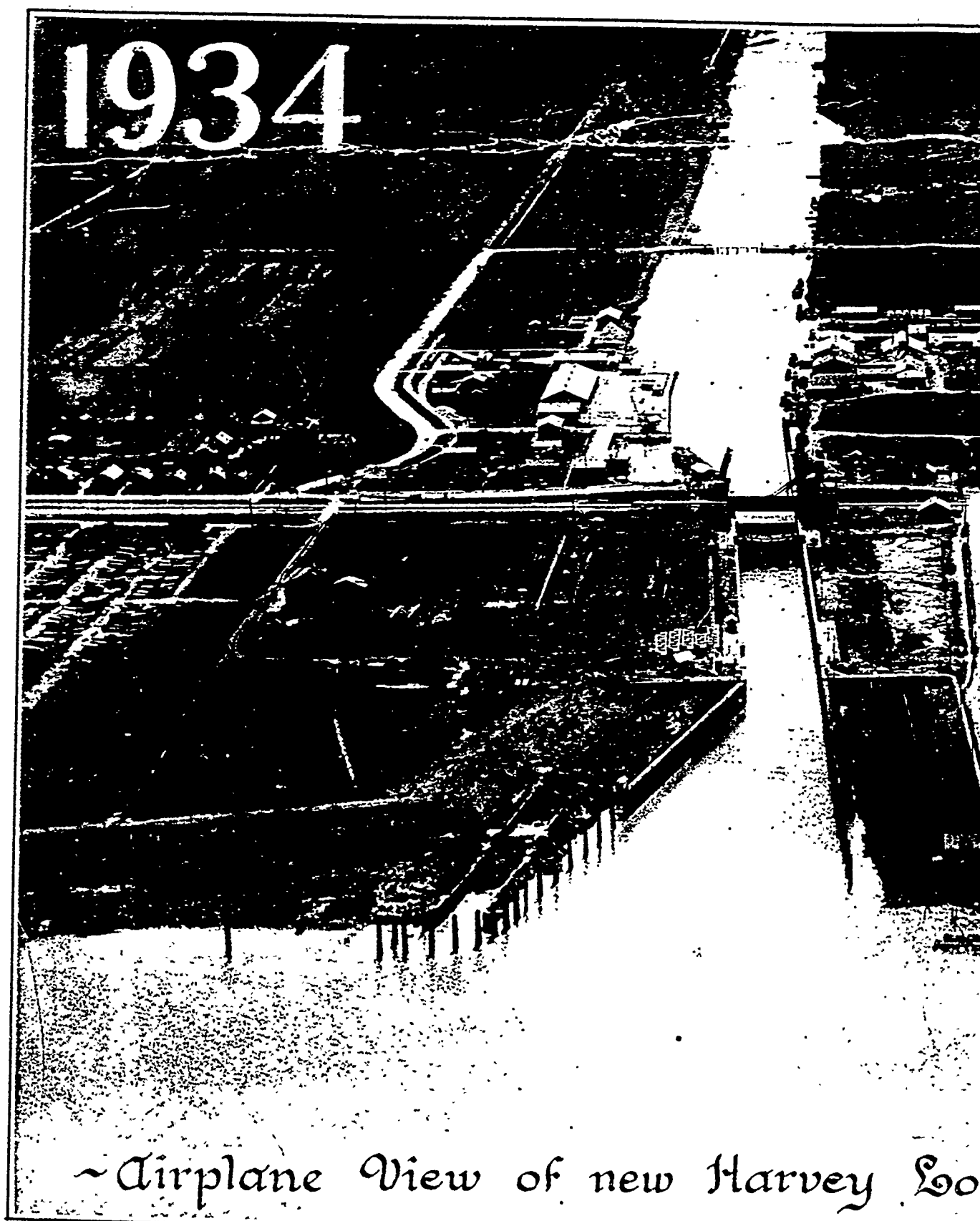
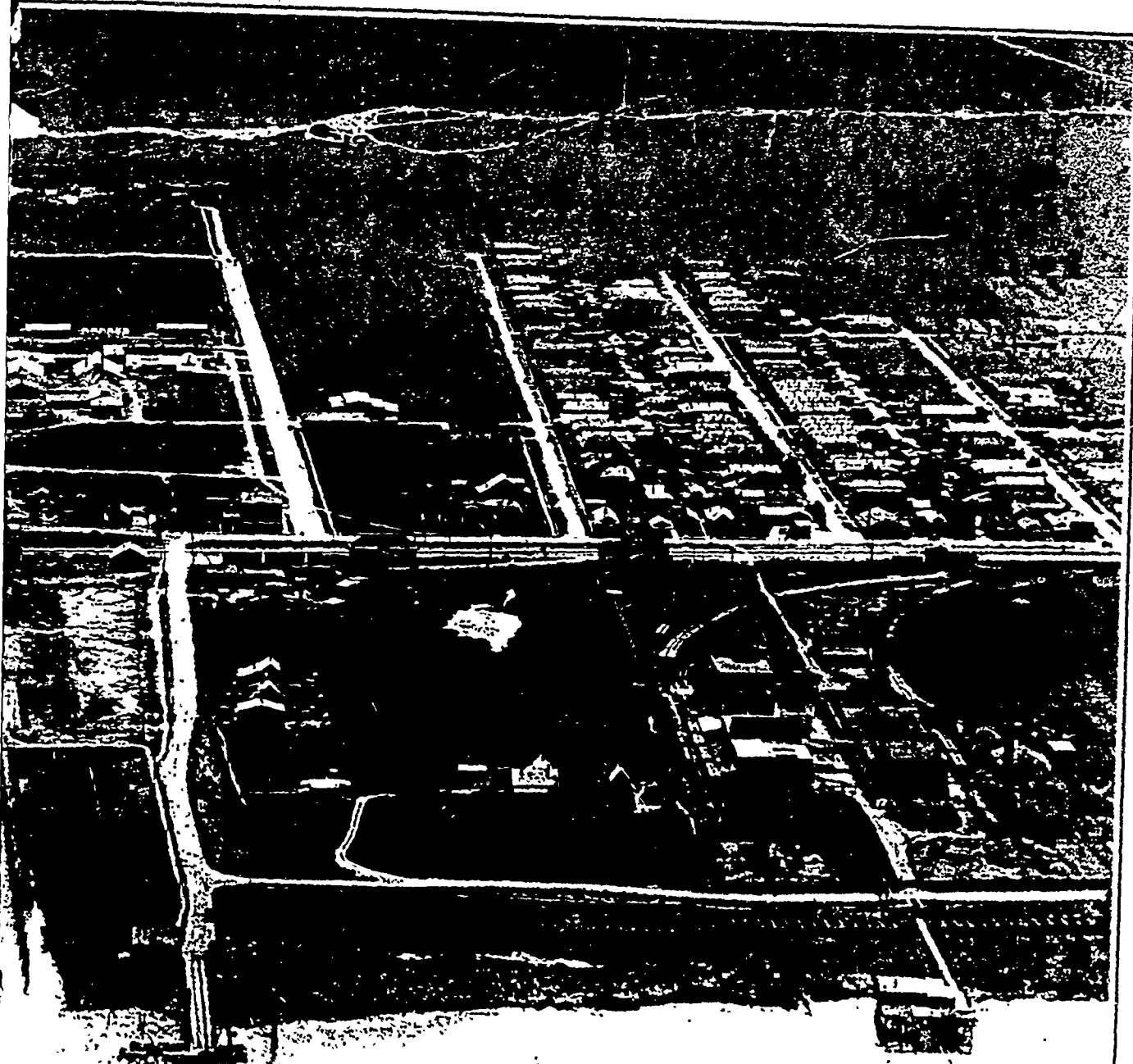


Figure 18. 1934 photograph of Harvey Canal area (Courtesy Keith Alexander, Harvey Canal Lockmaster).



ey Lock and Canal in Oct., 1934 ~

master).

explosion (Goodwin, Yakubik et al. 1985:54). On the westbank, defensive works were constructed at the Company Canal and at Little Temple. Fort Livingston guarded the Barataria waterways, the back door to New Orleans. All of these fortifications were outside of the project area.

Residents of Jefferson Parish supported the Confederacy with their money and their lives. Private citizens and the parish government contributed \$6,000.00 for the construction of the fortification at Little Temple shell midden; this site protected the Barataria bayous. The most famous Confederate military unit organized in Jefferson Parish was the Jefferson Mounted Guards. Captain Guy Dreux organized the Guards on December 13, 1860, a month before Louisiana seceded from the Union. The 70-man company served as the escort for General P. G. T. Beauregard, commander of the Confederate Army of the Mississippi (Goodwin, Yakubik et al. 1985:54; Swanson 1975:93).

The unexpectedly rapid, but bloodless, capitulation of New Orleans in April 1862 allowed the study area to pass peacefully under Union control. Once in Union hands, the region was fortified quickly. Although no engagements were fought within the project boundaries, the westbank of Jefferson Parish was strategically important to the defense of New Orleans. Union soldiers garrisoned the area for the remainder of the war to discourage Confederate sympathizers living on the westbank of Jefferson Parish (Goodwin, Yakubik et al. 1985).

By the end of May 1862, Union soldiers under Major General Benjamin F. Butler occupied all of the previous Confederate camps in Jefferson Parish. Agriculture remained the dominant industry in the area following federal occupation, but planters had difficulty maintaining a sufficient labor force. Despite Butler's orders prohibiting interference with slave ownership, some Union soldiers seized slaves and the Union camps became havens for runaway slaves known as "contrabands" who joined the Union Army. When Butler was replaced by Nathaniel P. Banks at the end of 1862, he transferred command of several regiments of former slaves (Goodwin, Yakubik et al. 1985).

Jefferson Parish remained under Union control until July 1868 when Louisiana was officially readmitted to the Union. The state remained part of Major General Philip Sheridan's Fifth Military District until Reconstruction ended in 1877.

The Postbellum and Industrialization Period 1865-1945

Introduction

During the postbellum nineteenth century and the early twentieth century, the extractive industries of the project area became increasingly mechanized as new technologies and manufacturing processes stimulated commercial growth. The traditional family-based industries were replaced by corporate ownership. The lumber industry expanded at a phenomenal rate, until the vast stands of Barataria cypress and other woods were depleted in the late 1920s. Brickmaking decreased in importance along the westbank project vicinity, however, partly because of competition from alternative building materials and better made St. Louis bricks. The expanding commercial activity of the City of New Orleans found the westbank a prime location for new port facilities and manufacturing plants (Jefferson Parish Yearly Review 1939, Swanson 1975; Reeves 1980). The Jefferson Parish Police Jury officially acted on attracting more industries from New Orleans. The minutes of April 7, 1887, testify to their purpose of bringing more companies to their parish:

Whereas we are informed that there are capitalists in New Orleans seeking to locate sites for various manufactories and considering that the Parish of Jefferson offer desirable location therefore, and that it is in the interest of our parish to have such manufactories located in our midst, be it resolved, that it is the sense of this jury to offer every inducement and encouragement with its jurisdiction, and solicit visits to our Parish to all such capitalists before locating elsewhere (Works Progress Administration 1940 5:331-332).

Transportation systems were enlarged and improved, with the railroad industry in particular increasing its holdings along the riverfront. The Harvey Canal was widened, and its shipping capabilities attracted various industries. Manufacturing along the study area riverfront increased rapidly between 1890 and 1945. Most of the new plants made products from familiar resources such as cotton, sugar, lumber, and seafood (Swanson 1975; Jefferson Parish Yearly Review 1939).

Truck Farming

The plantation era ended in the study area by 1870, but agricultural activities in the form of truck farming continued during the Reconstruction Period (Goodwin, Yakubik et al. 1985). Truck and dairy farming started on the westbank in the early nineteenth century. For example, Destrehan made profits from his orchid gardens and dairy during the 1830s and 1840s (Furman 1904:56). The vegetable and dairy products were shipped to local and regional markets. Figure 17 shows the numerous truck farm tracks situated between Harvey and Gretna in the early twentieth century.

Canals

After the Civil War, the Gardere Canal in Harvey and the LaBarre Canal in Gretna underwent minor dredging and enlarging projects and were used for the associated sawmills and brickyards. They were industrial canals and were not used extensively for shipping. Both canals were purchased in the 1890s by the Louisiana Cypress Company for use by smaller sawmill plants. After 1930, these canals were used primarily for drainage and sewerage. The remains of the Gardere Canal still are evident along the riverfront property of the WITCO plant in Gretna.

The Harvey Canal did not have locks between 1850 and 1880; therefore, boats did not pass directly into the Mississippi River. The boats were hauled by mules onto a submerged railway and were towed to the river. The proposed enlargement and construction of locks for the canal was initiated in the 1850s. In 1854, the Louisiana Legislature authorized Joseph H. Harvey to construct a lock to connect the canal with the Mississippi River provided that he would be accountable "for all damages from overflow that may arise from any imperfection of their work" (Acts of Louisiana No. 142, 1854). The work on the canal and locks continued into the twentieth century. In 1924, the Harvey descendants, who established the Harvey Canal and Improvement Company, sold the canal to the federal government. The canal became part of the Intercoastal Waterway System. In the 1930s, the canal and locks were enlarged to their present size, 425 ft long, 75 ft wide, and 12 ft deep (Swanson 1975).

The Lumber Industry

Joseph Rathborne's Louisiana Cypress Company, established in 1889 directly downriver from the Harvey Canal, was the largest post Civil War industry in the study area. This extensive cypress logging and lumber business remained prominent until it closed in 1929. Ranked as the world's largest cypress mill in 1897, the company owned 50,000 acres of Barataria swamp forest. The Barataria forest stands were felled in the fall and winter by laborers called "swampers." Pushboats were used to transport felled timber from the logging canals to riverfront processing centers. In 1901, the Harvey factory was described as:

...located on the Southern Pacific road. Built in 1889 and consists of sawmills, shingle mills, planing mills, and dry kilns. Their capacity is 100,000 ft per day. The company owns and operated its own wharf, permitting shipping to all parts of this country and foreign ports. The company also owns three towboats, used for towing logs to their mills (Evans 1901:20).

Figure 17 and the 1893 Mississippi River Commission map depict the company's factory and lumber yards at the river's edge, below Harvey's canal, respectively (Figure 19). Two smaller Louisiana Cypress Company

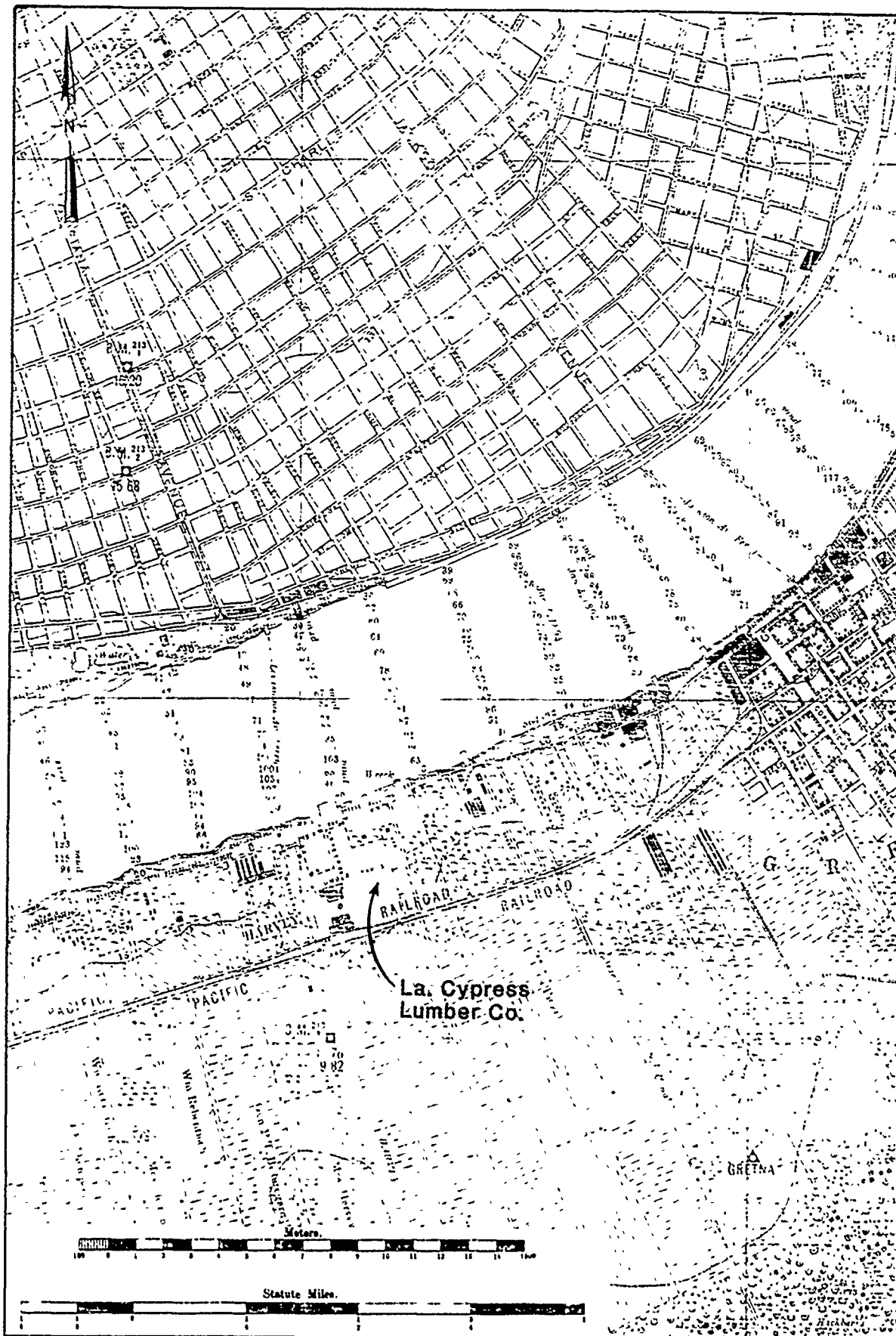


Figure 19. Excerpt from 1893 Mississippi River Commission Map (Chart 76) showing the Harvey Canal area including the Louisiana Cypress Lumber Company.

satellite plants, built in the 1890s, were located downriver toward Gretna (Swanson 1975:117). These sawmill yards were the sites of the previous Gardere and LaBarre sawmills. They ceased operation in the 1920s.

Brickyards

The extensive loam deposits along the Mississippi River in the project area near the Harvey Canal facilitated brick manufacture. Brickmaking continued in the study area until the beginning of the twentieth century. The original Destrehan Brickyard was established in the 1830s directly downriver from the old drainage canal (Figure 2). Charles and William Bobb established another brickyard when they acquired lots 8 and 9 from the succession of Nicholas Noel Destrehan in 1849 (Figure 12). To date, no specific historic documentation (other than the previously described historic maps, Figures 6, 16, and 17) has been found concerning Bobb's Brickyard situated above the Harvey Canal.

As previously stated, the descendants of Destrehan, the Harveys, constructed a brickyard immediately downriver from the Harvey Canal while the canal was being constructed in 1848. The Harvey family continued to operate this family brickyard until 1896 (Swanson 1975:122). Figures 20 and 21 are sketches of a brickyard drying house at the Harvey Canal in the 1870s and 1896 respectively. These drawings by Will R. Shaw do not identify the exact location or the owners of the brickyard; but since the Harvey Brickyard was the only one located along the canal, it is probable that these renderings are depictions of the Harvey family brickyard. On Sunday, April 22, 1882, The Times-Democrat published an advertisement for the Harvey Brickyard. It read:

**BRICKS. BRICKS.
The Old and Original
Harvey's Canal Brick Manufactory**

Established by J.H. Harvey in 1848, Parish of Jefferson, Right Bank.

Bricks delivered by Morgan's Louisiana and Texas Railroad or by Texas and Pacific Railroad, also by barges on the river.

These bricks are manufactured from clay excavated from the Harvey Canal, and are even stronger than those made from the annual Mississippi deposits, as they will not disintegrate or soften from damp or saline atmosphere.

All bricks branded H. Address only

MRS. LOUISE HARVEY.

Box 1, Gretna La., or Box 30, Mechanics, Dealers and Lumberman Exchange, N.O. (*Times-Democrat* 1882:p5,c4).

The expansion of the Louisiana Cypress Company holdings along the downriver side of the Harvey Canal during the early twentieth century may have ended the operation of the Harvey family brickyard.

During this same period, the LaBarre brothers began operating their brickyard near Gretna. Figure 16 shows the location of LaBarre Brickyard in 1877; this brickyard operated until 1893. The revenues of the brickyard declined after 1860 (Reeves 1980:11), and it is not clear whether the Louisiana Cypress Company, which purchased the brickyard property in 1890, continued the operation of the brickyard.



Figure 20 Drawing by Will R. Shaw circa 1870s, depicting a drying house at the Harvey Canal Brickyard (The Historic New Orleans Collection).

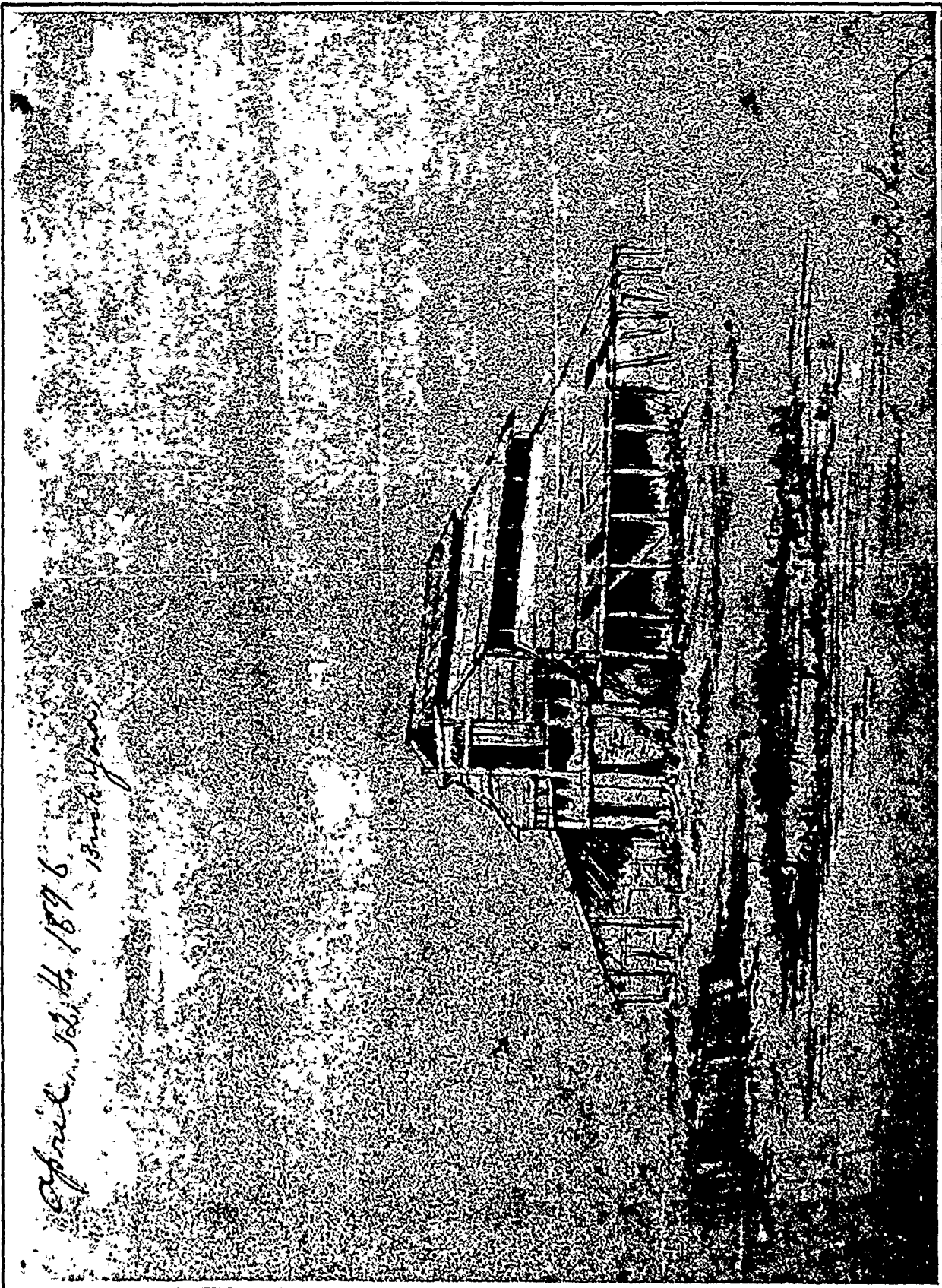


Figure 21 Drawing by Will R. Shaw, depicting a drying house at the Harvey Canal Brickyard in 1896 (The Historic New Orleans Collection)

Railroads

The first railroad in the project vicinity was established in the 1850s. The New Orleans, Opelousas, and Great Western Railroad linked Algiers and New Orleans with Texas. Figure 6 depicts the railroad stretching from Algiers to Harvey in 1863. In 1869, this line went bankrupt and was sold to steamship magnate Charles Morgan at an auction sale. The railroad line was renamed Morgan's Louisiana and Texas Railroad and rail transportation was coordinated with shipping on his existing New Orleans and Texas steamship line. In March of 1885, Morgan's railroad was leased to the Southern Pacific Company, which later merged into the larger Southern Pacific system (Oge 1930:4). The New Orleans, Mobile, and Texas Railroad, was established in 1870. It extended from New Orleans to Houston, and Westwego was the initial point of operations. At Harvey, the Texas and Pacific and Southern Pacific lines, which replaced the New Orleans, Mobile and Texas Railroad and Morgan's Louisiana and Texas Railroad respectively, intersected with the Harvey Canal. It was operated as a link in the New Orleans and Texas Railroad and Steamship line. Jay Gould owned a small local railroad line in the study area in the 1880s called the New Orleans Pacific Railroad. Gould built a terminal in McDonoghville for his line, which eventually was absorbed by his larger Texas and Pacific Railroad. During the 1880s, Gould became president of the Missouri Pacific Railroad. He merged this line with the Texas Pacific creating the Texas Pacific-Missouri Pacific Railroad, which had a terminal in upper Gretna (Figure 22).

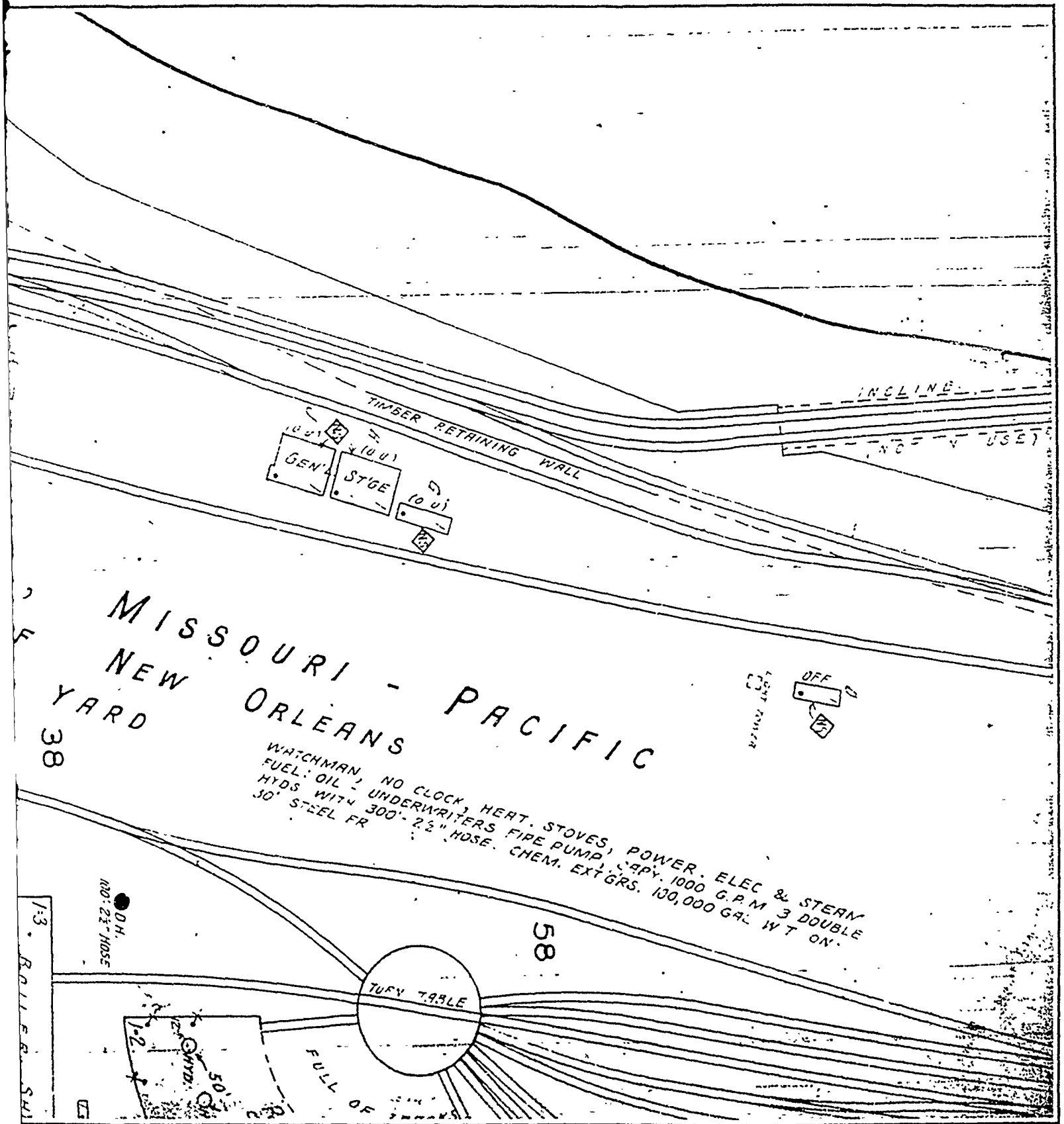
Wharves and Warehouses

The industrial buildup of the riverfront study area included construction of large storage facilities. As manufacturing increased, so did the number of structures used to store valuable products and equipment. The railroad companies owned most of the wharves and warehouses in the project vicinity. Before the Huey P. Long Bridge was completed in 1935, the Southern Pacific and the Texas Pacific-Missouri Pacific Railroad transported railroad cars across the Mississippi River on railroad barges to rail yards in New Orleans. In Gretna, the railroads had adjacent transfer depots at the end of Huey P. Long Avenue. Sanborn Insurance Maps depict the Gretna depot wharves in 1937 (Figure 23). Figure 24 also shows the Gretna railroad depot, where sidewheel steamer barges transported the rail cars. There were two rail car barges, the *L.S. Thorne* and the *Gouldsboro*. The *L.S. Thorne*, which operated between 1898 and 1942, could ferry 18 freight or 9 passenger railroad cars. The smaller *Gouldsboro* could carry ten freight cars or five passenger cars (Curry 1986:49). These railroad transfer depots are still remembered by the citizens of Gretna. Curry states:

Both tracks and depots for the two railroad companies have been Gretna landmarks for years. Even today, area residents continue to refer to locations on the "S-P" track and the "T-P" track, rather than to Fourth Street and Third Street, respectively (Curry 1986:49).

The Texas Pacific-Missouri Pacific Goldsboro Terminal Yard covered approximately 20 blocks of riverfront property in Gretna (Figure 22). W. C. Coyle and Company, Inc., transported coal using a barge fleet that docked at the end of Slidell Street in Gretna. Other large, privately owned wharves and riverfront warehouses in the study area vicinity during the early twentieth century included the American Distilling Company warehouse, the Fairy Soap wharf, the Southern Cotton Seed Oil Company facility, the Jefferson Ice Company, the Gulf Refining Company, and the Seaboard Refining Company, all located in Gretna (Figures 17 and 25). Another important historic industrial wharf in the study area was the Louisiana Cypress Company wharf in Harvey (Figures 17 and 25).

Railroad Wharves. There are two large railroad wharves located within the project corridor; the Southern Pacific Railroad Wharf and the Perry Street Wharf. Railroad wharves first appeared along the riverfront near the city of New Orleans during the early part of the twentieth century. The basic design of the Mississippi River railroad wharves in the New Orleans vicinity has remained similar over the decades, with new building materials and loading technology improvements being the major differences between the older railroad wharves and the newer ones. Most of the railroad wharves in the New Orleans area are



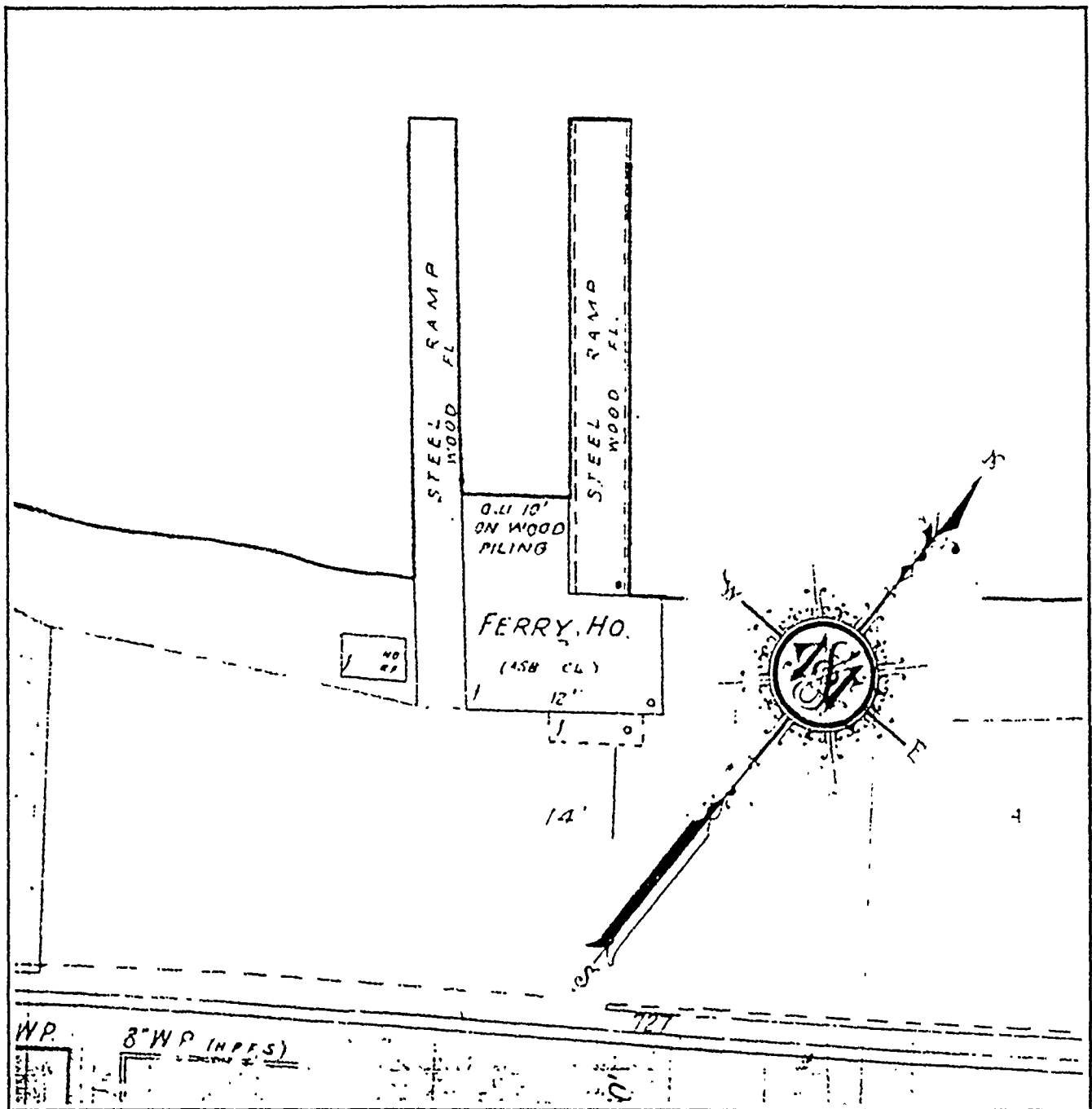


Figure 23. 1937 Excerpt from Sanborn Insurance Map showing Gretna depot railroad wharves (Louisiana Collection, University of New Orleans Library).

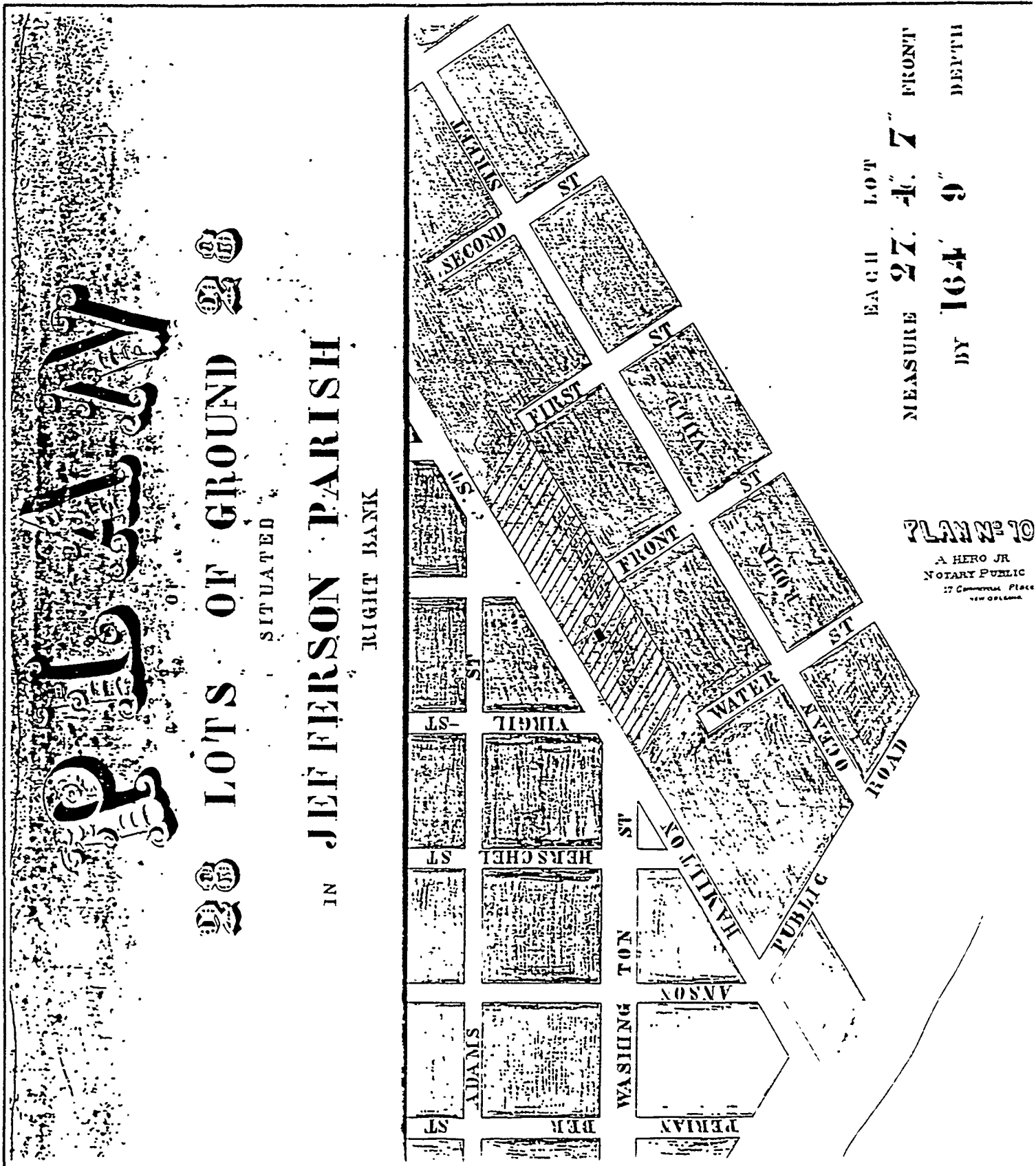
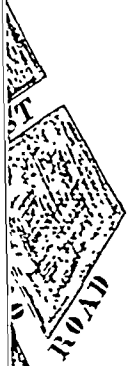


Figure 24. 1916 Survey Map by W.H. Reynolds, showing Gretna depot railroad wharves (Archives, Center for Regional Studies, Southeastern Louisiana University).

EACH LOT
MEASURE 27' 4" 7" FRONT
BY 164' 9" DEPTH

PLAN No 10

A HERO JR
NOTARY PUBLIC
17 Commercial Place
NEW ORLEANS



MISSISSIPPI RIVER

GRETNA

ST

JACKSON

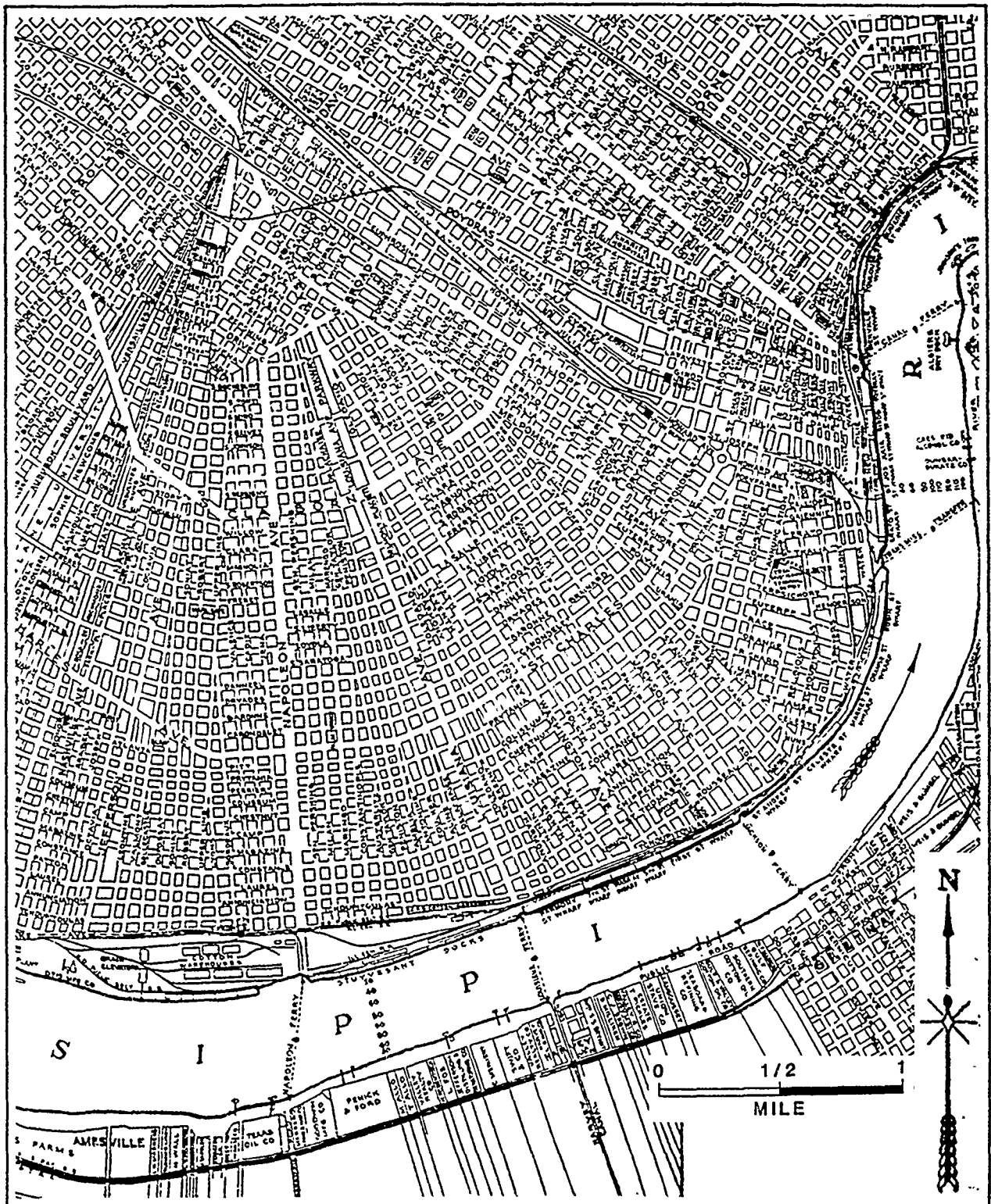


Figure 25. Excerpt from 1920 Map of New Orleans and Adjacent Parts of Jefferson and St. Bernard Parishes (Louisiana Collection, New Orleans Public Library).

marginal wharves (extending perpendicular with the bankline), with a warehouse placed on the landward side, and the railroad tracks placed on the riverward side of the wharf (Figure 26). The arrangement of placing the railroad tracks along the edge of the wharf may be a regional design variation. According to Greene (1917:193), the positioning of the rail lines on the outer portion of the wharf is not advantageous because "a single tract on each side of the pier can seldom be kept full of cars, and the space it occupies on a wharf cannot be used for other purposes when not occupied by cars." However, Greene's advocacy is based on marine wharf construction and does not take into consideration the spatial logistics of riverine wharves. One of the earliest Mississippi River railroad wharves of this type in the New Orleans area was constructed by the United Railway and Trading Company on the Orange Grove Plantation property at English Turn. Built before 1915, the 350 ft marginal wooden railroad wharf served the sugar factory and bagasse paper mill exclusively. The New Orleans and Gulf Railroad, and later the Louisiana Southern Railroad ran one track onto the riverward side of the wharf. The warehouse was situated along the landward edge of the wharf. The structure was abandoned in the 1920s, and burned in the 1930s (*States Item* January 24, 1932).

During the 1910-1920 decade, the Southern Pacific Railroad constructed a similarly designed railroad wharf along the Mississippi River approximately between Fried and Richard Streets in Gretna. This wharf was torn down during the 1940s, and replaced by a smaller railroad wharf. The original wooden designed cargo wharf was 870 ft long, 200 ft wide, with a single-story transit shed, 38,992 square ft. The total wharf space measured 100,800 square ft. The Southern Pacific Railroad wharf supported an average holding capacity of 350 pounds of cargo to the square ft (McChesney 1920:13). Figure 27 is a photograph of the wharf in 1925. Wooden pilings supported the large wooden deck, with three separate railroad tracks accessing onto the wharf. Figure 28 shows the second wharf in 1951. The second wharf, constructed also of wood, measured 400 ft in length, and was approximately 50 ft wide. The second wharf provided access to two train tracks. During the 1960s, the wharf was purchased by the National Molasses Company. The size of the railroad wharf has been reduced since by the removal of the riverside track. The privately owned and operated Southern Pacific Railroad wharf primarily shipped sugar related products such as molasses and syrup.

Another railroad wharf, the Seatrail Terminal (16PL87), was located on the west bank of the Mississippi River, near Belle Chasse. It was constructed in 1927-1928 as part of an early containerized cargo system. Filled railroad cars were loaded onto specially designed vessels, and the railroad cars were transported to a similar railroad wharf facility in Havana, Cuba. The cars were reloaded in Havana with agricultural goods such as pineapples and sugar, and returned to the Seatrail Terminal. Because of labor and political problems, use of the terminal ended during the 1950s, prior to Fidel Castro's takeover of Cuba (Garson et al. 1982).

Although the Perry Street Railroad wharf, located directly upriver from the Mississippi River Bridge off of Perry Street in McDonoghville, is similar in design to the United Railway and Trading Company wharf, and to the Southern Pacific Railroad wharf, it is not an historic structure. The Perry Street Wharf was proposed by the Board of Commissioners of the Port of New Orleans in 1955 to facilitate needed public wharfage. The site location was chosen along the less congested westbank riverfront. Construction began in 1957 and was completed in 1959. The design of the Perry Street Wharf is typical of modern wharf construction at the Mississippi River Port of New Orleans (Pierre Cordell Reeh, Dock Board Planning Commissioner, personal communication 1988). Steel pilings with concrete encasements support a concrete deck. The pilings were driven through a concrete and steel mattress, with a concrete collar placed around each piling to cap them to the mattress (Figure 29). Breasting and mooring dolphins (platforms) were added on the downriver side for anchoring (Figure 30). The wharf provides access to the Missouri Pacific Railroad. The tracks enter the wharf from the downriver side, and run along the riverside of the wharf (Figure 31). The entire wharf is approximately 1000 ft in length, and 225 ft in width. A truck loading area on the upriver side of the cargo wharf extends an additional 125 ft. The Perry Street Wharf is a public cargo facility. Companies desiring to use the wharf procure anchorage, storage, and loading rights from the Port of New Orleans Dock Board. There are two companies presently renting permanent wharfage on the Perry Street wharf, the Vinings Company, and Ashland Cement Company.

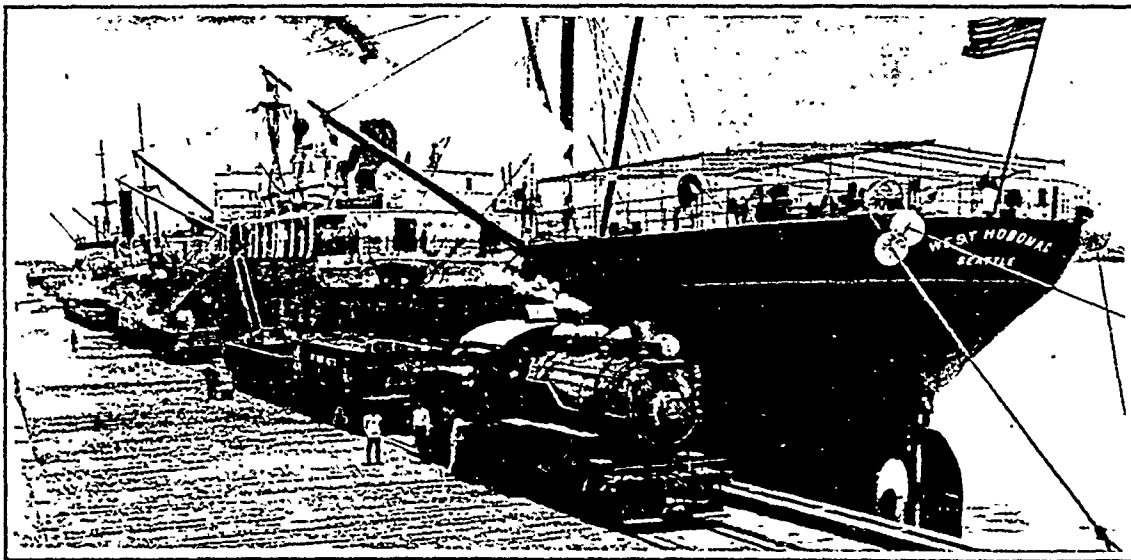
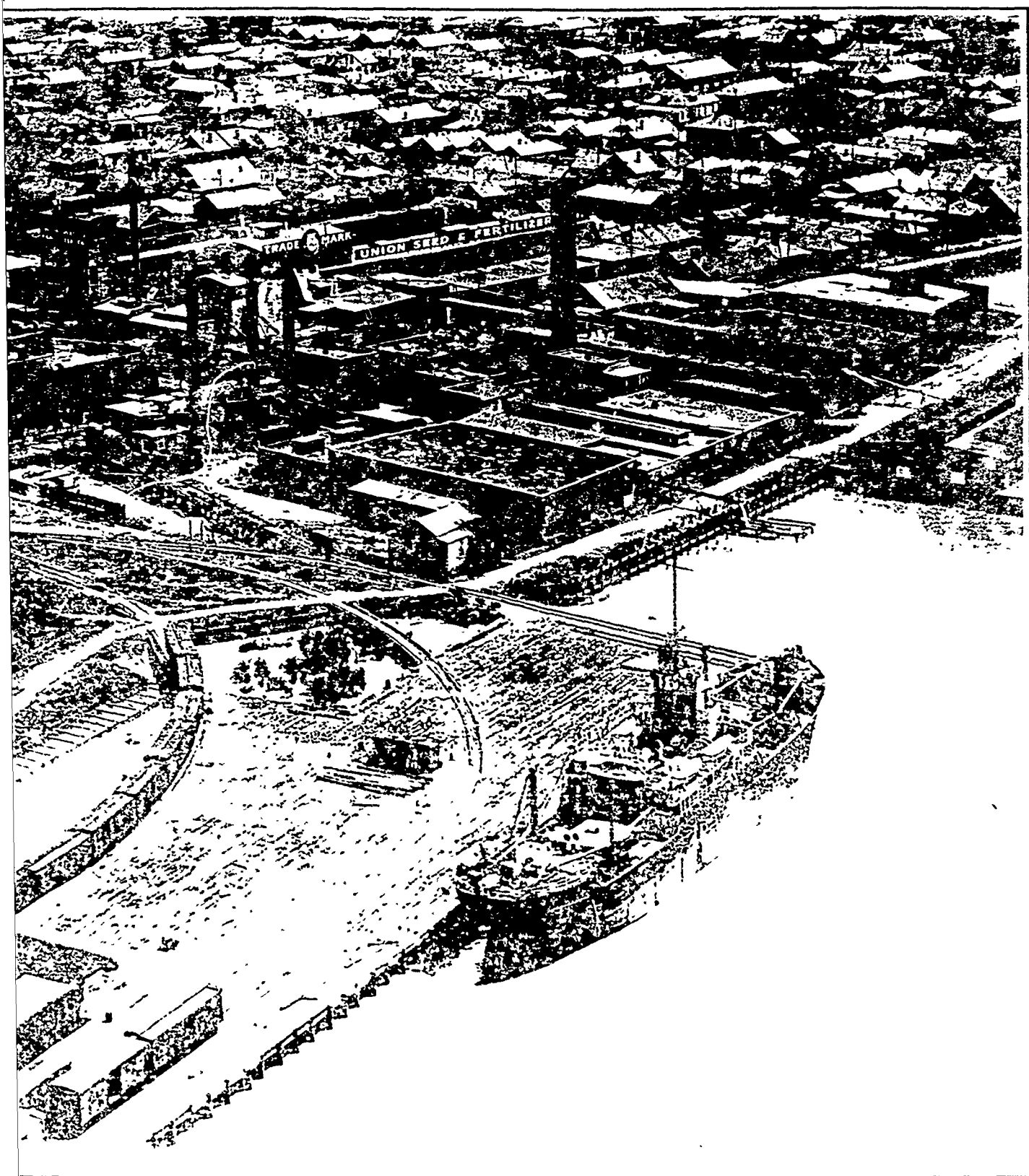


Figure 26. 1920 photograph of a typical New Orleans railroad wharf (Louisiana Collection, New Orleans Public Library).



Figure 27. 1925 photograph of Southern Pacific Railroad wharf in Gretna (Louisiana Collection, Tulane University Library).



in, Tulane

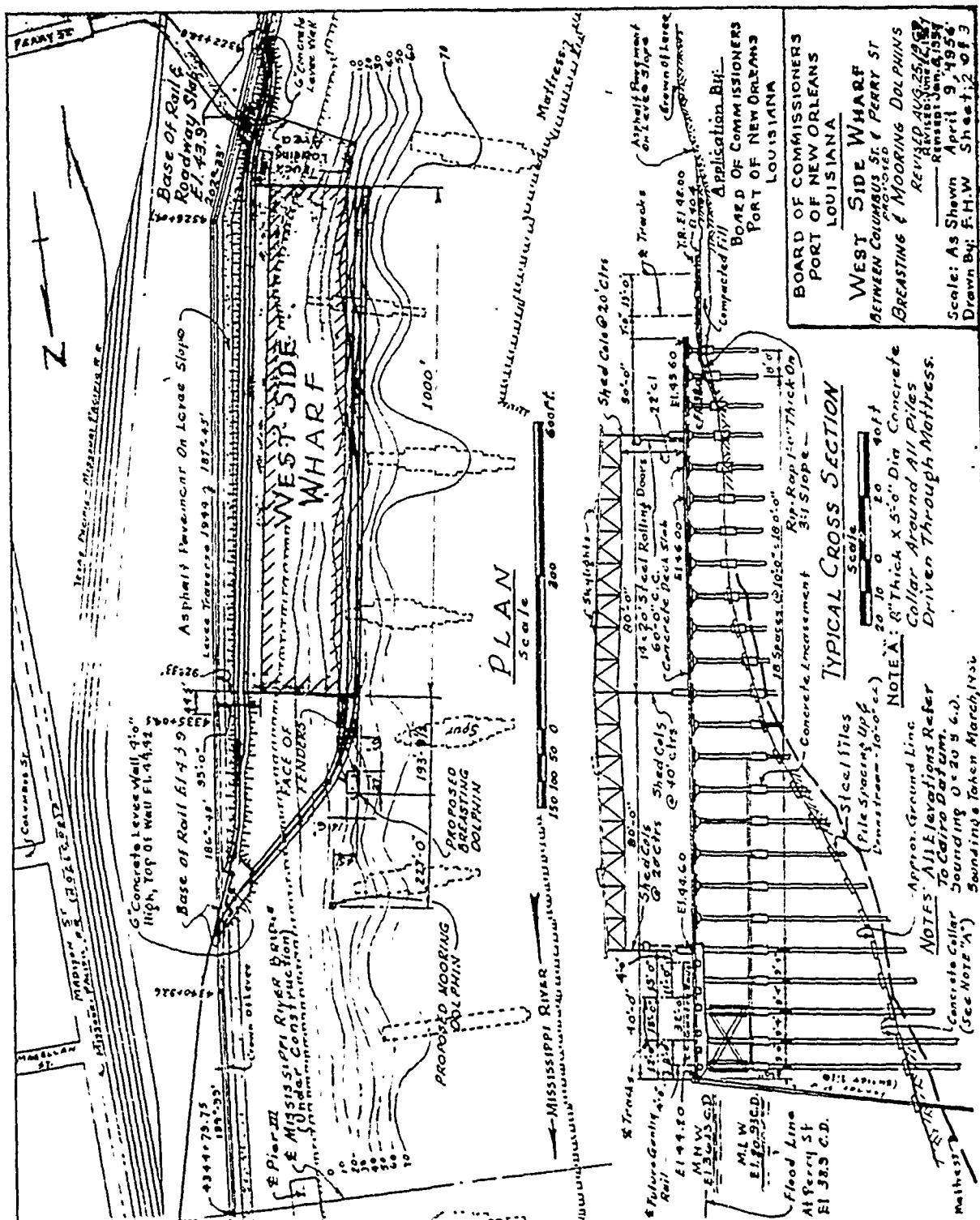
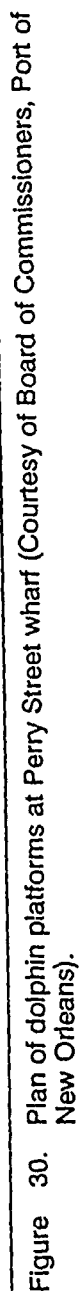


Figure 29. Plan of Perry Street Wharf (Courtesy of Board of Commissioners, Port of New Orleans).



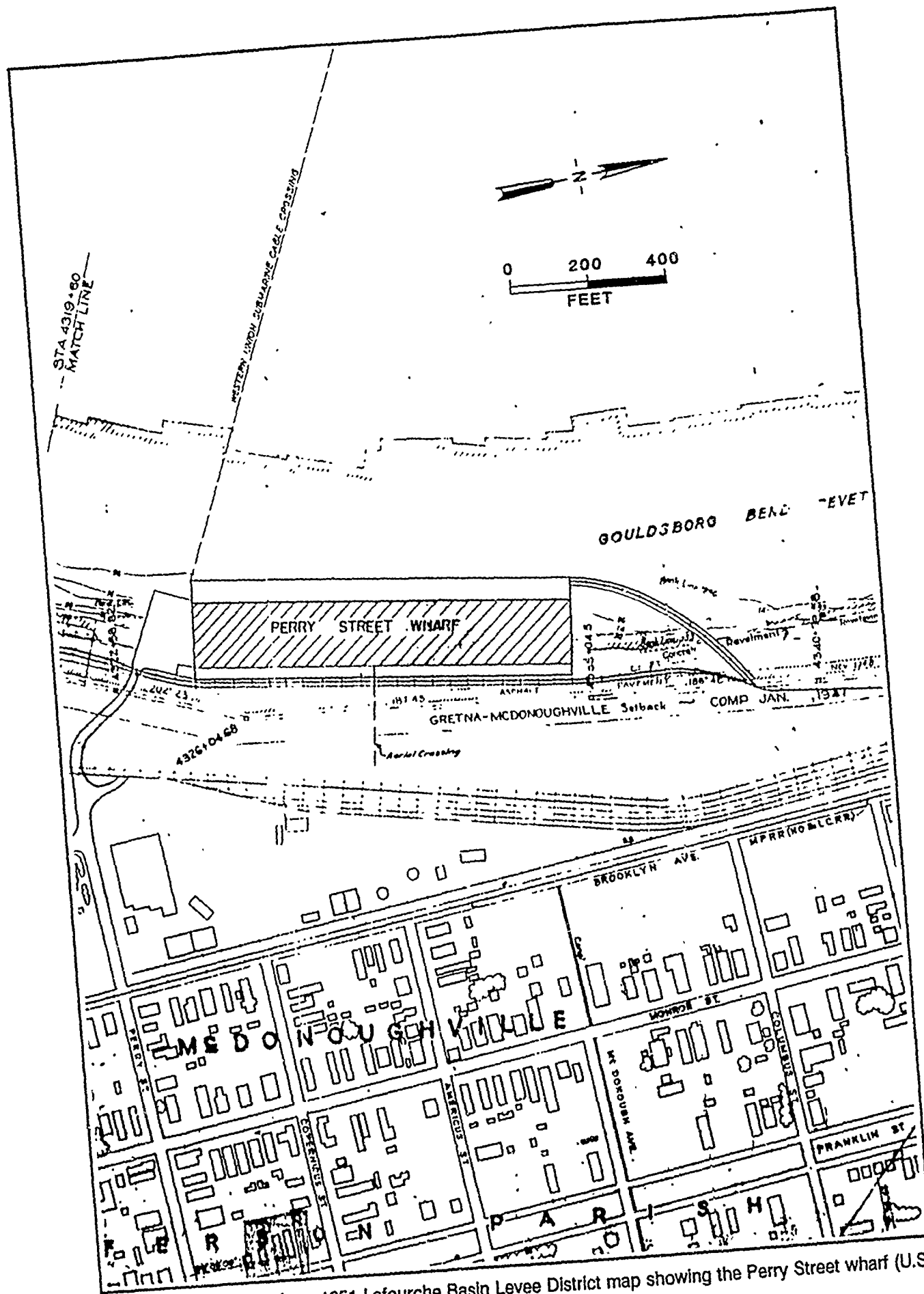


Figure 31. Excerpt from 1951 Lafourche Basin Levee District map showing the Perry Street wharf (U.S. Army Corps of Engineers, New Orleans District).

Manufacturing

The rise of manufacturing along the study area riverfront coincided with the expansion of the transportation industry. The increased availability of shipping and railroad lines encouraged entrepreneurs to invest in manufacturing plants. Most of the first large scale manufacturing in the project corridor produced the traditional extractive products. Cotton, sugar, lumber, and seafood products were the basis for related manufacturing industries that located in the study area during the late nineteenth and early twentieth century. The largest manufacturing industry in the project area during the early twentieth century was producing cotton seed oil and cake and other cotton seed products. Shipments of cotton seed oil and cake from New Orleans totalled 68,885 in 1896. By 1902, this total increased to 211,635 tons (Englehart 1903:131,132). Cotton seed was used to make soaps, lards, fertilizers, and feed. Seven large cotton seed companies established manufacturing plants in the Gretna area. The Southern Cotton Oil Company, established in Gretna in 1887, was one of the first processing plants in Jefferson Parish. The company was founded by Dr. Wesson, who discovered the exclusive process for producing cooking oil under steam vacuum. Figure 32 shows most of the Southern Cotton Oil Company in 1937. The Seaboard Refining Company, Ltd., established in Gretna in 1902, also processed cotton seed oil for southern markets, as did the Gulf and Valley Cotton Oil Company, the Standard Cotton Seed Oil Company, the Sherwood Refining Company, and the Union Oil Company (Figures 17 and 25). Swift and Company, established upriver from the Harvey Canal, also manufactured cotton seed oil products (Jefferson Parish Yearly Review 1939).

Products made from cane sugar established processing companies and large storage facilities in the project corridor. Pennick and Ford, Limited, Inc., was founded in Gretna in 1910. After moving to a larger facility in Marrero, this company was the world's largest canner of cane syrup in the 1920s. The American Distilling Company produced rum and commercial alcohol from molasses and grain. Figure 33 shows the location of the American Distilling Company along the Gretna riverfront in 1937. The American Molasses Company established a barreling plant in Gretna in 1929. This plant shipped raw molasses via water transport to markets in Boston and New York (Jefferson Parish Yearly Review 1939). The Union Stave Company was located on the river between Harvey and Gretna (Figures 17 and 25). This factory produced sugar and rice barrels and shipped staves to plantations and refineries. In 1901, this company employed 120 people (Evans 1901:19).

In the early 1900s, banker Charles Granier established the first shrimp canning facility in the Harvey Canal area. The company was located along the upriver side of the canal. In 1914, Granier sold his canning company to the Southern Cotton Oil Company, known today as the Southern Shellfish Company (Thoede 1976:62). In 1932, the Continental Can Company was established on an 11-acre tract near Harvey; by 1939, this plant produced 100 million cans annually (Jefferson Parish Yearly Review 1939).

Petrochemical Companies

As mechanization and industrial technology evolved during the early twentieth century, the demand for petroleum and related chemical products increased. Most manufacturing plants in the study area maintained their own machine shops and chemical laboratories. The cotton seed oil companies, for example, made their own chemical reagents (i.e., sulphuric and hydrochloric acids) to make fertilizers and soap products. Chemical reagents also were made locally for the distillation of petroleum hydrocarbons (on a small scale), which was conducted by oil companies in the project area. After crude oil was discovered in Lafitte in 1935, capital investment in the oil industry along the westbank of Jefferson Parish increased dramatically. One of the first petroleum companies in the project vicinity was the Delta Oil Company, located upriver from the Harvey Canal. After 1935, Shell Oil, Texaco, WITCO, and Standard Oil of California purchased real estate in the project vicinity near Gretna (Jefferson Parish Yearly Review 1939).

Summary of Significant Historic Themes

The people who first settled the project area made their living by exploiting the available natural resources. The land directly south of New Orleans and the Mississippi River offered rich agricultural soil,

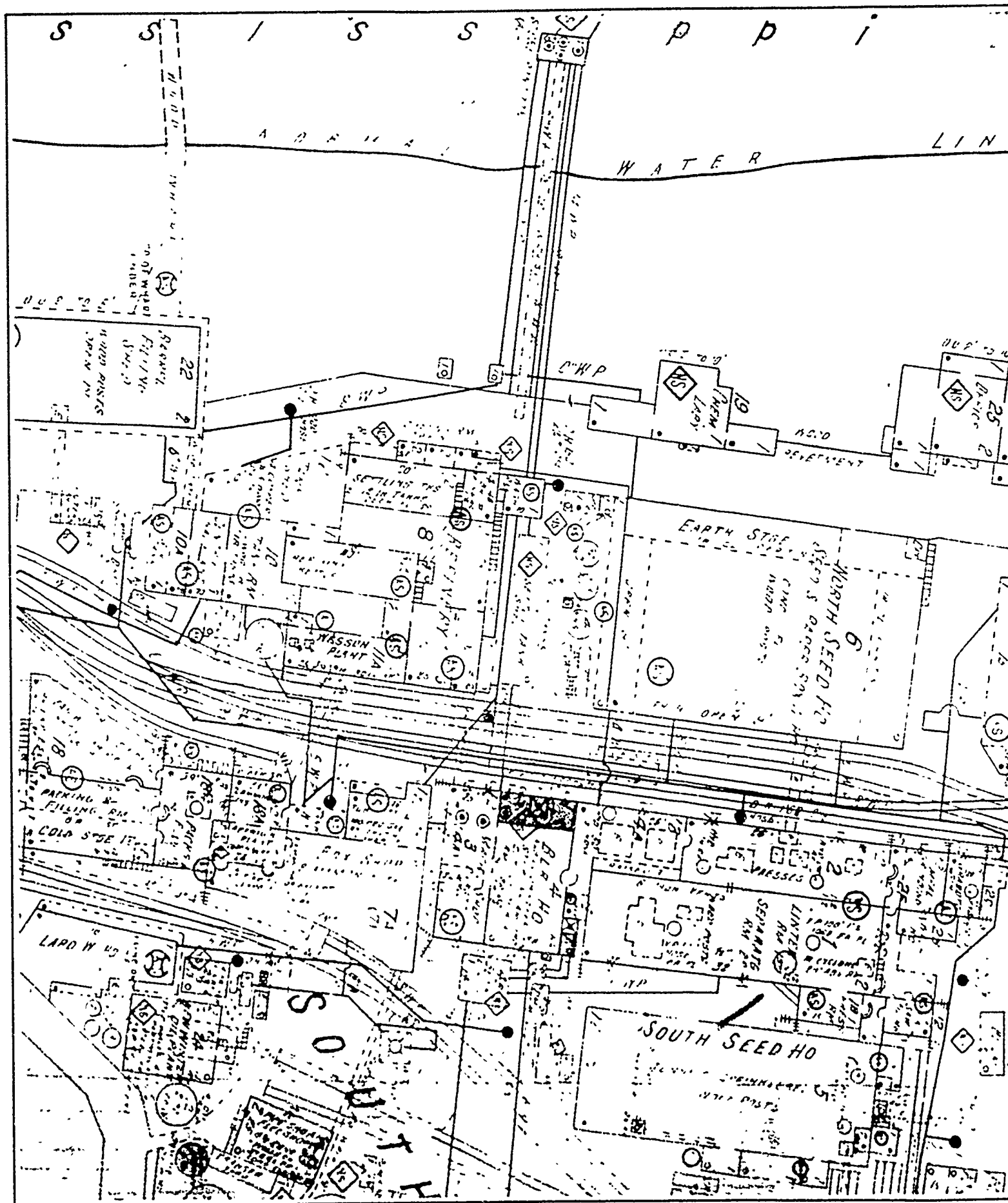
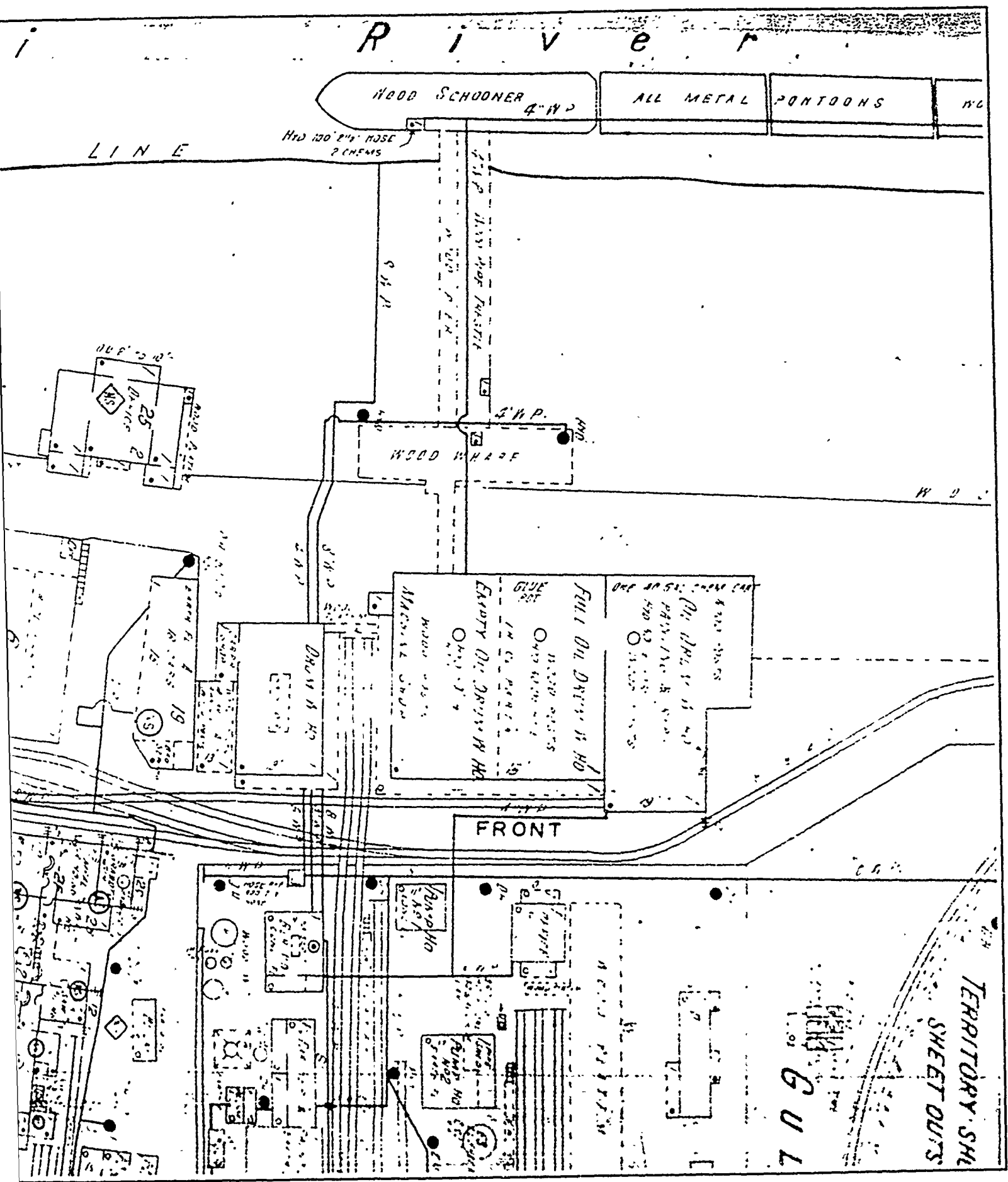


Figure 32. Excerpt from 1937 Sanborn Insurance map showing the Southern Cotton Oil Company in Gretna (Louisiana Collection, University of New Orleans).



GREटना

THE AMERICAN DISTILLING CO.
 AMERICAN COMMERCIAL ALCOHOL CORP.
 Industrial Alcohol Plant No. 170
 Jefferson Division No. 31 - District of La.
 OPERATES ALL YEAR

WATCHMAN CENTRAL STATION SERVICE CO. 1011 P. O. BOX 1011
 1011 P. O. BOX 1011 P. O. BOX 1011 P. O. BOX 1011
 1011 P. O. BOX 1011 P. O. BOX 1011 P. O. BOX 1011
 1011 P. O. BOX 1011 P. O. BOX 1011 P. O. BOX 1011
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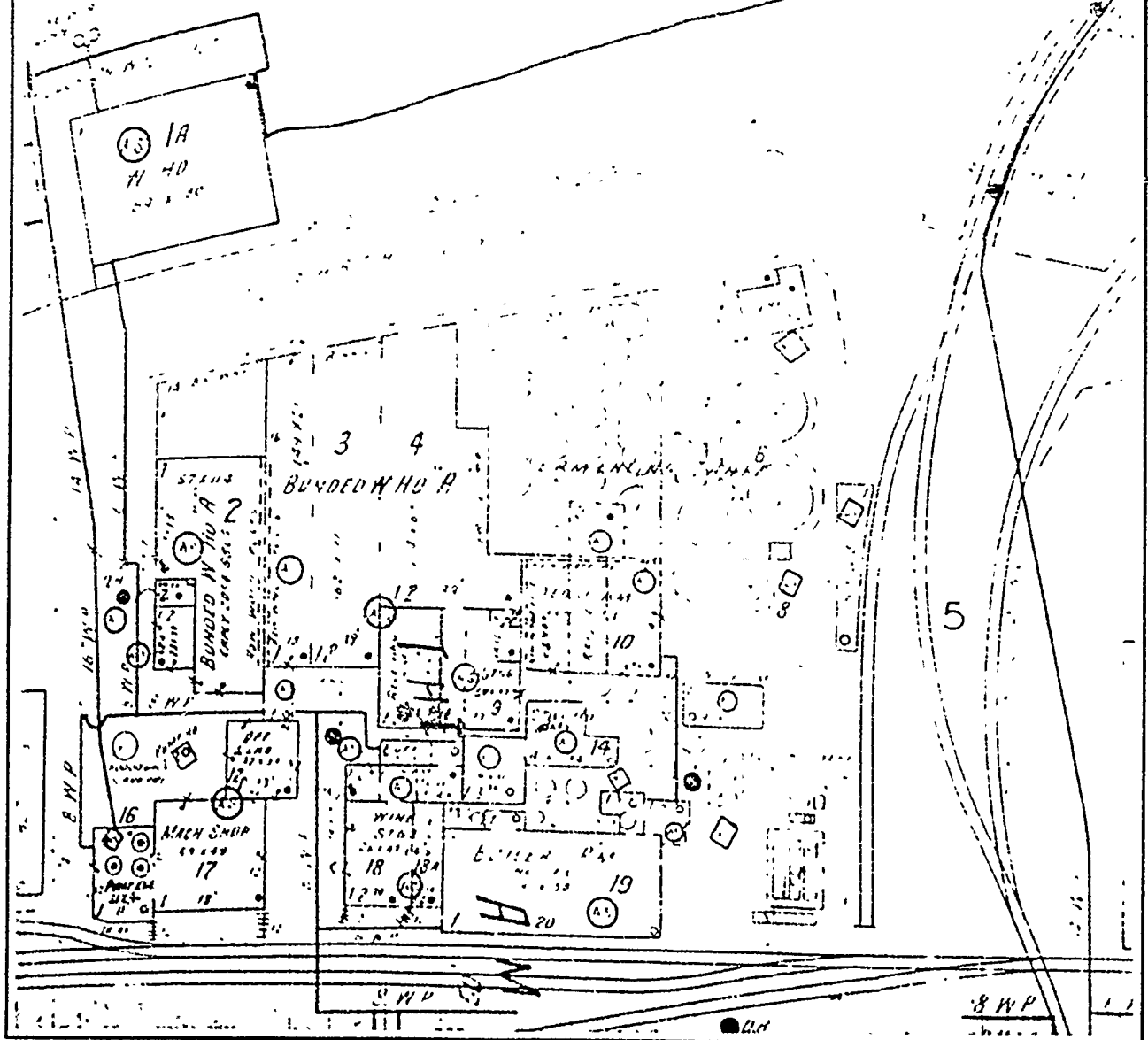
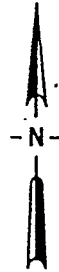


Figure 33. Excerpt from 1937 Sanborn Insurance map showing the American Distilling Company in Gretna (Louisiana Collection, University of New Orleans).

abundant cypress timber, plentiful game and fish, large deposits of alluvial clays for brickmaking, and natural bayous for transportation. The natural resources available in the study area stimulated the development of industries that found available markets in the expanding city of New Orleans. Overall, the proximity of the study area to the city of New Orleans, the Mississippi River, the Barataria Basin, and the Gulf of Mexico played a role in the cultural development of the region. The economy of the project area developed along agronomic patterns characteristic of lower Louisiana during the historic periods. However, the nineteenth century sugar cane industry did not dominate the economic setting of the region as it did in most areas of south Louisiana. Rather, initial extractive industries such as lumber, brickmaking, diversified farming, and water transportation became the post monocrop economic base that continued into the twentieth century. Antebellum steam technology diversified and expanded the earlier industries. As these industries grew, the need for skilled labor increased. Working class suburban communities were established in the project corridor throughout the nineteenth century. Toward the end of the nineteenth century, manufacturing and the transportation industry expanded. Most of the first manufacturing companies in the project area made products from traditional south Louisiana resources such as cotton, sugar, lumber, truck farm products, and seafood. The development of the railroad industry provided further impetus for industrial growth and stimulated the expansion of suburban communities along the Mississippi River study area.

A number of potentially significant historic properties are located within the survey reach. Some are associated with the nineteenth century industrial development of the area. Several canals, sugarmills, brickyards, and sawmills are depicted on the 1834 Zimple map (Figure 2); intact remains of any of these may possess the quality of significance. The postbellum Bobb's Brickyard and Harvey Brickyard also may be important resources. Other significant properties include antebellum domestic sites, especially those associated with the early development of McDonoghville, a working class and free slave community. Intact archeological deposits associated with any of these should be evaluated. A compilation of potentially significant sites depicted on the 1834 Zimple map (Figure 2) and the 1893 Mississippi River Commission map (Figure 19) are listed on Table 4 in Chapter VI.

CHAPTER V

RESEARCH DESIGN AND FIELD METHODOLOGY

Level II archeological investigations were conducted along the batture and within the impact area on the landward side of the levee. Because extensive surface disturbance from levee and revetment construction was anticipated along the batture, shovel testing was considered unlikely to penetrate to the depths required to reach the underlying undisturbed strata. Auger tests extending down into intact culture bearing strata were placed in areas that possessed some potential for containing historic cultural remains.

The levee setbacks and right-of-way enlargement areas were affected less seriously by levee and revetment construction and overbank deposition. Because of the greater potential for encountering intact historical remains near the surface in the landside areas, both the levee setbacks and right-of-way enlargement areas were subjected to a combined shovel and auger testing regime.

Prior to fieldwork, historic maps, including Charles Zimpel's 1834 *Topographical Map of New Orleans and its Vicinity* (Figure 2) and the 1893 Mississippi River Commission map (Figure 4), were examined to determine the location of historic remains. The approximate locations of brickyards, sawmills, and other historic features, including the historic town of McDonoghville, were examined for evidence of in situ archeological deposits.

Fieldwork was conducted in two phases. The first phase involved a systematic pedestrian survey of the entire project area. During this survey, the riverbank and ground surface were examined for evidence of archeological remains. Cultural remains observed during the pedestrian survey were noted, marked on the field maps, and evaluated to determine the need for further testing. Additional testing was conducted in areas where potentially significant intact subsurface historic (pre-1940) deposits were observed.

Two-inch Dutch auger tests were placed in areas containing historic cultural remains. In addition, auger tests were placed within all levee setback areas and right-of-way enlargements. All auger tests were excavated to a depth of 2 m, except in those instances when subsurface obstructions prevented further excavation. Stratigraphic soil profiles were drawn of all auger tests, and soil colors were recorded using Munsell Soil Color Charts. All auger tests were plotted on field maps, and artifacts recovered from the tests were bagged and labeled by auger test number, location, and depth. The upper 20-40 cm were examined to observe the stratigraphy and to document surface disturbance. Modern refuse such as plastic, modern beer bottle glass, etc. was observed throughout the survey area, while not collected, its presence was noted.

Auger testing was modified to take area-specific characteristics into account. While auger testing was planned for each of the identified historic sites identified within the project area, natural and cultural processes prevented the excavation of auger tests at some locations. For example, portions of the project area are on a cutting bank; in some areas the river has cut to the levee, removing the entire batture. A more widespread problem was the extensive impact of revetment construction. Large areas of the batture within the project area were covered with riprap, concrete, asphalt, or a combination thereof. While auger tests could be placed through the riprap in some areas, in many cases this upper bank protection prevented further archeological investigation.

Potentially significant archeological remains required additional testing. For example, 16JE207 and 16JE210 were probed extensively with a 1.5 m iron probe, and 1 x 1 m units were excavated to evaluate the nature of these sites. The units were excavated by natural strata, photographed, and profiled. Soil colors were recorded, and descriptive notes were taken. This testing is discussed more fully in the next chapter.

In addition to the levee setback and right-of-way enlargement areas, the batture within the historic town of McDonoghville was tested using the auger at 50 m intervals. The area tested extended from Hamilton Street, the historic southwest edge of the town, to the modern Perry Street Wharf. Beyond the wharf, auger testing was hampered by extensive upper bank protection.

CHAPTER VI

RESULTS OF THE FIELD INVESTIGATIONS

Introduction

In accordance with the research design, the entire Gretna Phase II Levee Enlargement Item project area was examined visually for archeological sites, with subsurface testing concentrated in the high potential areas identified on the 1834 Zimpel map (Figure 2), as well as within the levee setbacks and right-of-way enlargements. Those areas tested are summarized in Table 4. During this testing, six historic archeological sites and three historic standing structures were located (Figure 1). The six archeological sites included domestic, industrial, and commercial sites, and ranged in age from the late eighteenth century, to the early to mid-twentieth century. All three standing structures date from the early twentieth century; these included two houses and one marine transportation light and bell structure.

Site 16JE207

Site 16JE207 is located on the west (right descending) bank of the Mississippi River between Levee Stations 4129 + 50 and 4133 + 00. This site extends 30 m from the river to the levee; and covers approximately 0.8 acres. The site is covered by woods, underbrush, and grass. At the west end of the site, a linear depression approximately 0.5 m deep and 13 m wide extends from the river to the toe of the levee. The site would be damaged or destroyed by the planned levee enlargement.

There are two sections to this multi-component site. The upriver contains the foundation remains of a twentieth century office building. The northeast corner of this building, which was built largely with machine-made bricks, is in the Mississippi River. The remainder of the foundation is scattered in large chunks along the riverbank; it currently is part of the upper bank protection of the shoreline. No in situ archeological evidence of this building was observed along the bankline. This component of the site has no archeological integrity or research potential, and it is not a significant cultural resource. The second component, located downriver from the twentieth century office building, dates from the nineteenth century, and may contain significant archeological deposits.

The site was located during pedestrian survey of the project area when numerous handmade bricks and wasters were observed along the riverbank. These bricks and wasters were in two major concentrations, one by an observed feature and the second, larger concentration about 50 m downriver (Figure 34). Just inland from the upriver brick concentration, a brick feature was observed (Figures 35 and 36). The north half of this feature (Feature 1) was a rectangular brick enclosure measuring 1.8 m by 2.3 m, with interior dimensions of 0.8 m by 1.2 m. Based on probing, the interior compartment has a depth of about 60 cm, and it probably has a brick floor. It is connected on the south side to a 0.8 m wide arched brick feature, which extends 2 m into the bank; subsequent probing and shovel tests indicated its total length may exceed 22 m. This feature was built of handmade bricks bonded together with calcined Rangia clam shell mortar, which was used most commonly prior to the Civil War.

Thirty-nine probes and eight auger tests were used to determine the boundaries of the site. Most of these were placed along the axis of the feature or along rays perpendicular to that axis. A 1.5 m probe was used to define the extent of the brick features; a Dutch auger was used to record the soil stratigraphy and to confirm the presence of brick in areas where the probe encountered obstructions (Figure 37). In addition, a 1 x 1 m test unit was excavated to ascertain the nature of one of the located features.

Testing at the site uncovered two archeological features. Feature 1 was the brick feature that extends from near the river toward the levee. The axis of this feature was probed and auger tested at 2 to 4 m intervals from the observed feature to the riverside toe of the levee. Bricks were encountered in all of these tests; if this brick is continuous, Feature 1 is at least 25 m long. Several locations on either side of this axis were probed, but no obstructions were encountered in most of these areas. This may indicate

Table 4

RESULTS OF ARCHEOLOGICAL TESTING AT SITES PREDICTED BY A LITERATURE SEARCH

<u>Name/Description</u>	<u>Source</u>	<u>Approx. Location</u>	<u>Sub- Surface Testing</u>	<u>Comments</u>
J. Verloin Degruy Domestic Complex	Zimpel	4095+00	3 A.T.	Riprap along riverbank; no site located.
J. Verloin Degruy Pond	Zimpel MRC	4100+00	-----	Not significant.
B. Saulet Domestic Complex	Zimpel	4113+50	1 A.T.	Most of area covered with riprap; building recently torn down in area; much modern refuse; no site located.
N. N. Destrehan Domestic Complex and Gardens	Zimpel	4129+50- 4133+00	9 A.T. 39 Probes 1 Ex. Unit	Multicomponentsite(16JE207) including possible formal gardens, brickyard, and drainage feature; portion of riverbank covered with riprap; site discussed more fully in text.
Louisiana Avenue Ferry Terminus	MRC	4145+50	-----	Area covered with riprap; no visible evidence.
N. N. Destrehan Brickyard (Downriver)	Zimpel	4146+50	1 A.T.	Area damaged by Harvey Canal Canal and covered by levee and park; no site located.
Lumberyard with Pier	MRC	4161+50	-----	Area covered with riprap; no batture; pier located (16JE208); discussed more fully in text.
Shipwreck	MRC	4166+00	-----	In water; no evidence of shipwreck observed.
Setback on Rathborne Land Company Property		4160+50- 4169+00	6 A.T.	Twentieth century house remains (16JE209) located; low integrity; discussed more fully in text.
Setback on WITCO Chemical Company Property		4172+00- 4183+50	10 A.T. 26 Probes 1 Ex. Unit	Possible ca. 1770s-1840s brick kiln (16JE210) located; discussed more fully in text. Remains of Gardere Canal (on 1834 Zimpel) present outside project area.
A. Foucher, Jr. Sugarhouse	Zimpel	4175+50	-----	Riprap along riverbank; no testable batture.

<u>Name/Description</u>	<u>Source</u>	<u>Approx. Location</u>	<u>Sub- Surface Testing</u>	<u>Comments</u>
A. Foucher, Jr. Sawmill and Canal (Upriver)	Zimpel	4180+50	----	Riprap along riverbank; no testable batture.
A. Foucher, Jr. Sawmill and Canal (Downriver)	Zimpel	4184+50	3 A.T.	Riprap along riverbank; no site located on batture.
A. Foucher, Jr. Domestic Complex and Gardens	Zimpel	4188+50	2 A.T.	Site area at edge of No Work Area; riprap along riverbank; no site located.
A. Foucher, Jr. Brickyard	Zimpel	4194+00	----	In No Work Area.
Charles Derbigny Domestic Complex and Gardens	Zimpel	4209+00	----	In No Work Area.
Jackson Street Ferry Terminus	Zimpel MRC	4225+00	2 A.T.	Much riprap on riverbank; numerous handmade and machine-made bricks in area; site (16JE211) discussed more fully in text.
L. Faures Canal, Sawmill, Brickyard	Zimpel	4232+50	----	No Work Area.
W. Brown Domestic Complex	Zimpel	4238+50	2 A.T.	Numerous pilings for railroad wharf which predates current railroad wharf; no site located.
R. Delogny Domestic Complex	Zimpel	4251+50	2 A.T.	No site located.
J. S. David Domestic Complex	Zimpel	4257+50	2 A.T.	No site located.
J. McDonogh Domestic Complex	Zimpel	4264+50	2 A.T.	No site located.
Richard Street Ferry Terminus	MRC	4265+50	2 A.T.	No site located.
McDonoghville Batture Area (Upriver)	Zimpel MRC	4266+00- 4282+00	17 A.T.	Deeply buried site (16JE212) located at 4268+00; riprap along much of riverbank; site discussed more fully in text.
McDonoghville Batture Area (Downriver)	Zimpel MRC	4282+00- 4312+81	1.A.T.	Batture area from the Perry Street Wharf to the downriver end of the project area covered with riprap and asphalt; no archeologically testable area.
McDonoghville Levee ROW Enlargement century artifacts (Upriver)		4268+10- 4275+70	2 A.T.	Nineteenth and twentieth in upper 0.5 m; no evidence of intact deposits; area near railroad tracks.

<u>Name/Description</u>	<u>Source</u>	<u>Approx. Location</u>	<u>Sub- Surface Testing</u>	<u>Comments</u>
McDonoghville Levee ROW Enlargement twentieth century (Middle)		4276+30- 4281+00	3 A.T.	Late nineteenth and early fill for upper 1.0 to 1.3 m; no evidence of intact deposits; area near railroad tracks.
McDonoghville Levee ROW Enlargement twentieth century (Downriver)		4282+50- 4298+80	11 A.T.	Late nineteenth and early fill in upper 1.0 to 1.5 m; no evidence of intact deposits; area adjacent to railroad tracks.

KEY

A.T. = Auger Test Ex. Unit = Excavation Unit Locations = Correspond to Levee Station Markers

Charles F. Zimpel, *Topographic Map of New Orleans and Its Vicinity*, 1834.

Mississippi River Commission, *Survey of the Mississippi River, Chart No. 76*, 1893.

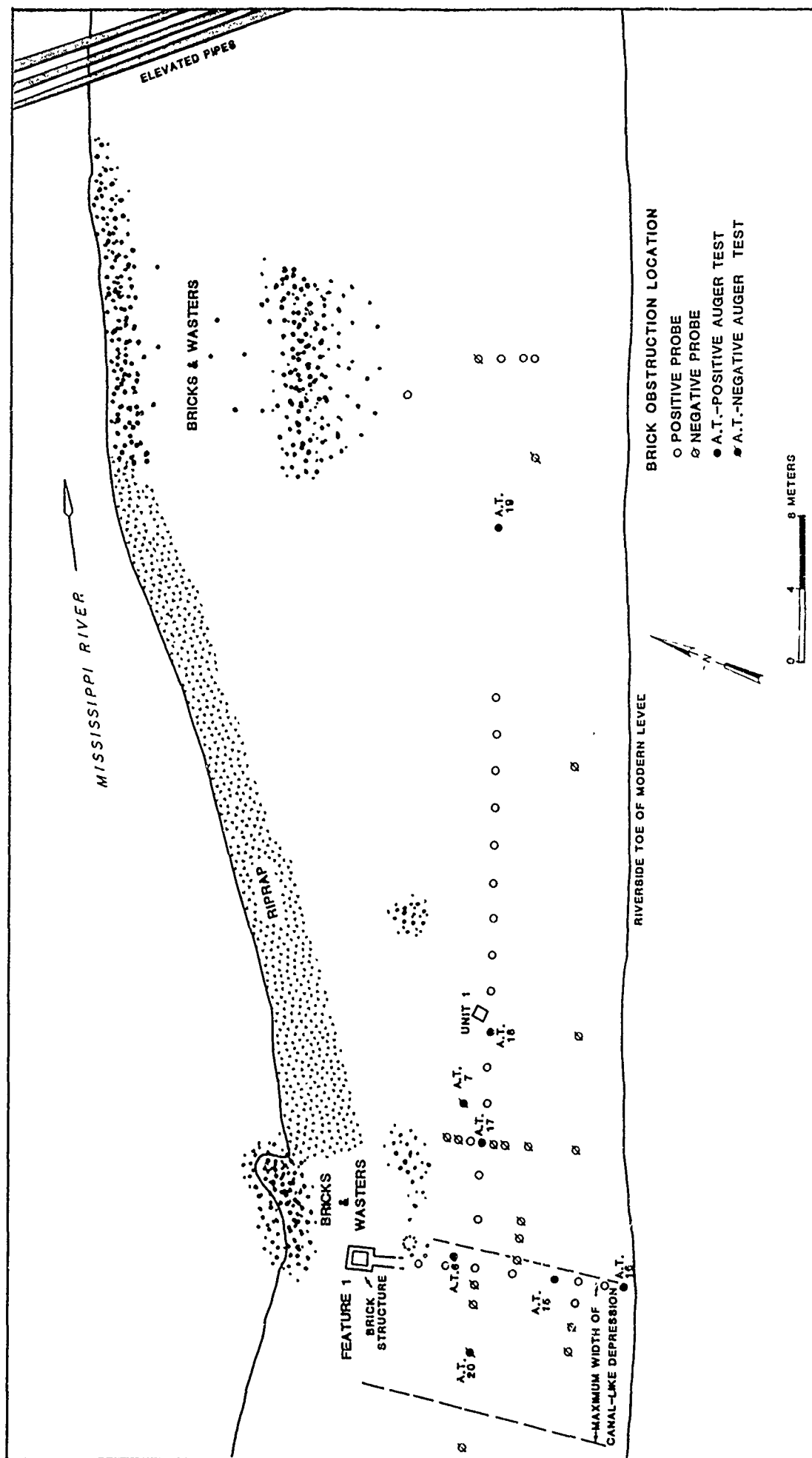


Figure 34. 16JE207 site plan.



Figure 35. Feature 1 at 16JE207, facing east.

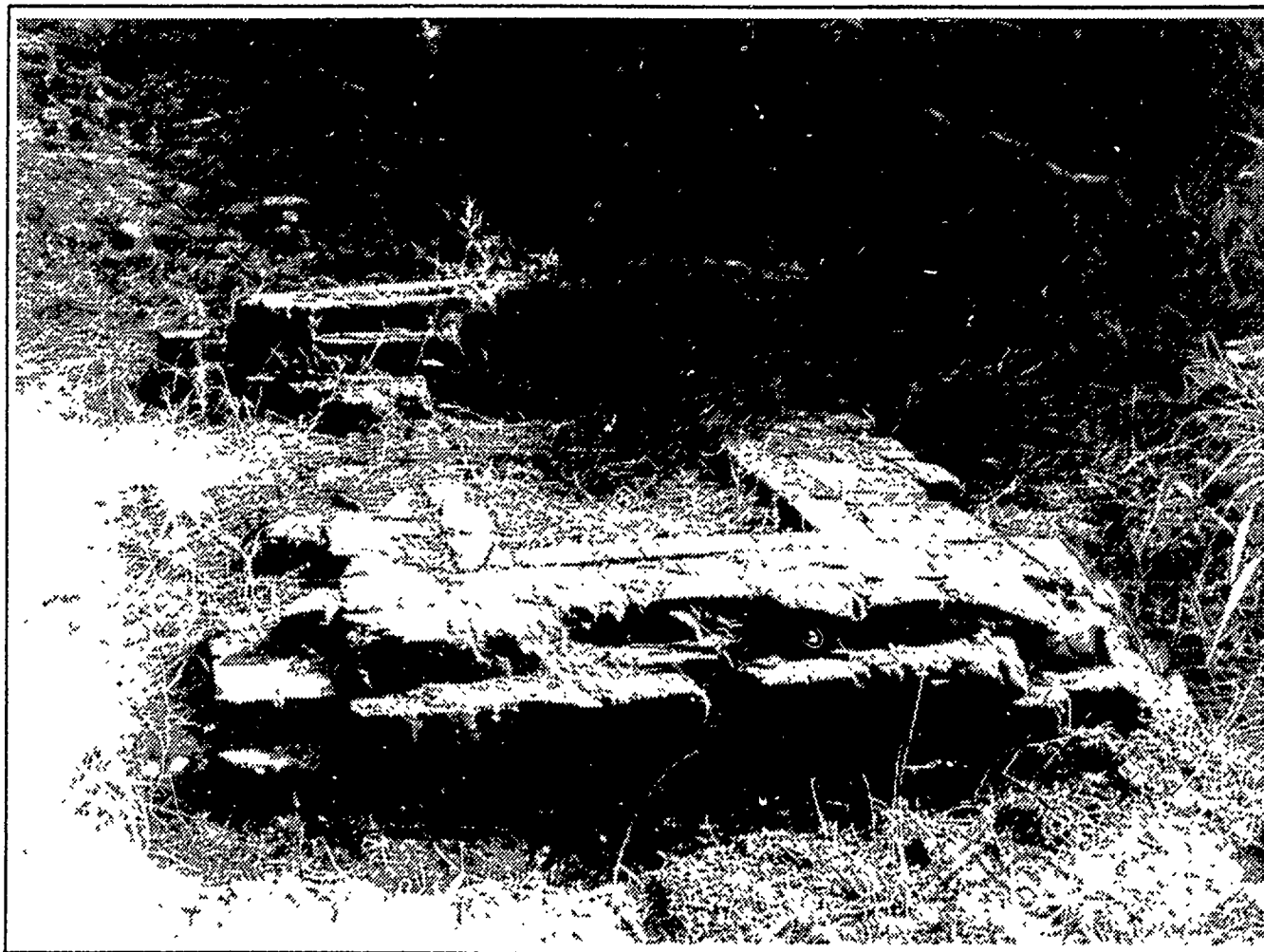


Figure 36. Feature 1 at 16JE207, facing south.

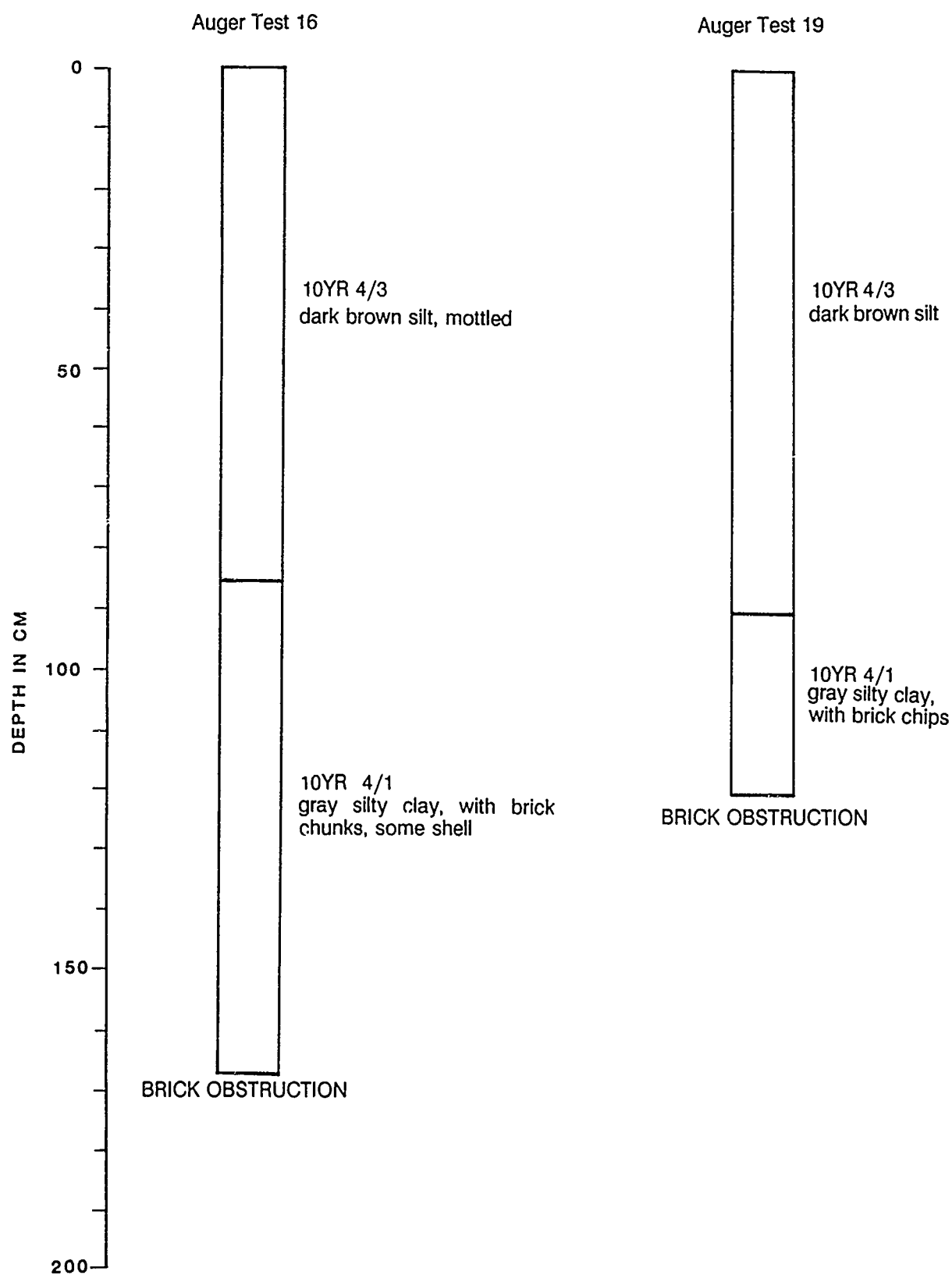


Figure 37. Auger test profiles at 16JE207.

that the feature is no more than 2 to 3 m wide. The function of this feature is unclear. It may be associated with a formal garden, with a water drainage feature, or with an historic brickyard. Additional archeological testing is necessary to document this feature and to determine its precise function.

Feature 2 begins about 10 m from the north end of Feature 1 and it is perpendicular to it. Probe and auger tests indicate that it extends at least 75 m eastward. Probing was not possible beyond that point because of packed shell and overburden due to higher elevation. The width of the feature was probed in two areas. In one area, about 11 m east of Feature 1, Feature 2 was no more than 2 m wide. At 75 m east of Feature 1, Feature 2 was at least 3 m wide. The results of probing and auger testing indicate that Feature 2 does not extend west beyond Feature 1.

A 1 x 1 m test excavation unit was placed over Feature 2. This unit, which was located 21 m east of Feature 1, was excavated following the natural stratigraphy. Excavated soils were examined for artifactual remains. Eight strata were observed (Figure 38). Artifacts from this unit indicate that Strata I through III were twentieth century refuse deposits; each of these strata contained modern refuse such as asphalt, vinyl, plastic, modern glass, nylon rope, an iron rod, wire, leather, brick fragments, and shells. Strata IV through VIII contained handmade brick fragments and coal, with no modern artifacts observed. While the soils in Strata I through III were a variety of colors, each of the lower five strata was nearly uniform in color. These observations indicate that the upper three strata are modern in deposition, while the lower five strata are historic, probably dating from the nineteenth century.

Stratum VII was a 20 to 25 cm thick deposit of handmade brick fragments, mixed with coal. This brick rubble formed a fairly even surface. It was capped with three undisturbed strata (Strata IV through VI). Stratum IV was a 10YR 4/1 gray silty clay, while Stratum V was a 10YR 4/2 dark grayish brown silty clay. Both contained brick chips and small brick fragments. Stratum VI was a 1 to 4 cm thick, hard-packed deposit of 10YR 4/2 dark grayish brown silty clay, with brick and coal fragments. The brick rubble, Stratum VII, rested on Stratum VIII, a 10YR 3/1 very dark gray clay, which is a natural batture sediment. The lower deposit was probed to 1 m, with no obstructions encountered.

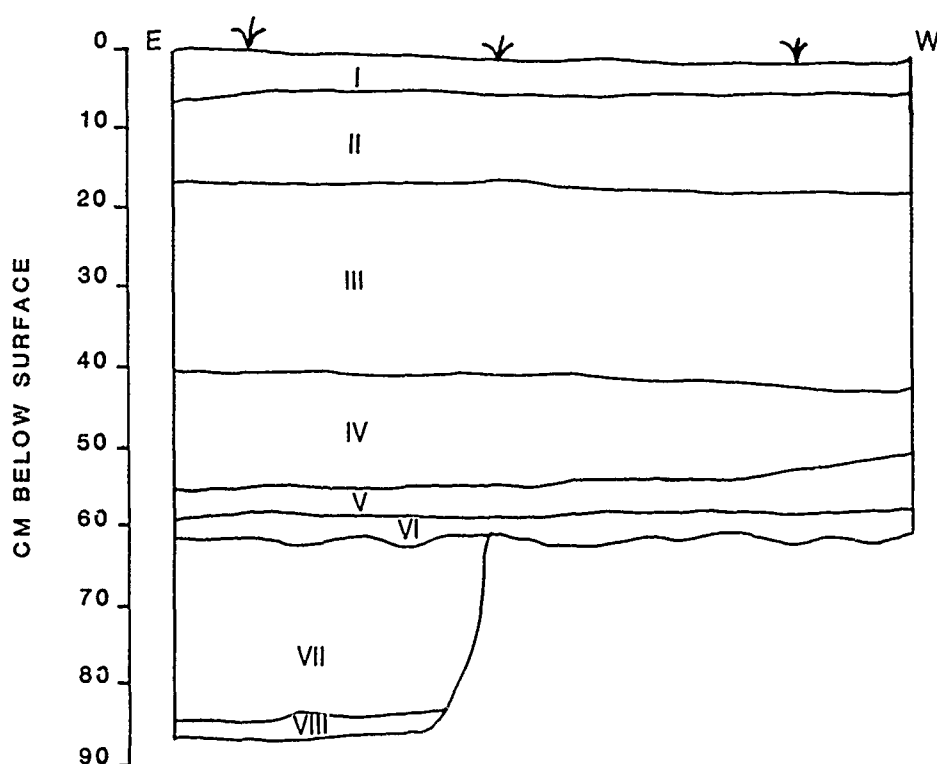
Because of its linear nature and the evidence from the excavation unit, it is hypothesized that Feature 2 is a brick road. A 2 to 3 m wide area, extending at least 75m east from Feature 1, was filled with brick fragments and capped with a layer of silty clay. The result was a sturdy, hard road that would support considerable weight that could have been used during inclement weather.

Several key questions remain unanswered concerning the precise function of Feature 2. It is unlikely that Feature 2 was a public road, since it was within an historic domestic and garden complex, as shown on the 1834 Zimpel map (Figure 2), and possibly within a nineteenth century brickyard complex. It extends directly to Feature 1, and it does not continue to the west of Feature 1. It may have been a road within the gardens, or one used to transport bricks, material, and equipment within the brickyard complex. It is unclear whether additional features intersect Feature 2. In addition, the probing at the east end of the identified portion of the feature indicates that the feature may be wider at the east end than at the west end; this could denote a work area or the presence of an additional feature.

One more possible archeological feature was located with the probe. An isolated probe test just south of the downriver surface brick concentration encountered an obstruction, probably brick, at 60 cm below surface. While this could be a subsurface continuation of the brick rubble, it also could be part of an intact feature. Further archeological testing would determine whether a feature is present at this location.

Comparison of the 1834 Zimpel map and of the modern USGS topographic map indicates that this site is located just upriver from the Destrehan Canal, which was built prior to 1815 and which bisected N. N. Destrehan's property at the approximate location of the formal gardens shown on the 1834 map (Figure 3). By 1839, two additional structures were built in front of the formal gardens (Figure 4). This property was sold to Charles and William P. Bobb in 1849. During the 1850s, Charles Bobb constructed a brickyard very close to the old Destrehan Canal, near the formal gardens. Bobb's Brickyard operated until the 1860s; the exact terminal date for the brickyard has not been determined.

Profile of Unit 1, Facing South



- I: 10YR 5/3 brown silt
- II: 10YR 3/2 very dark grayish brown clayey silt banded with 10YR 5/2 grayish brown silt
- III: 10YR 4/3 dark brown silt mixed with 10YR 5/3 brown silt with 10 x 13 cm packet of 10YR 4/1 gray clay, with a lens of 10YR 3/2 very dark grayish brown clayey silt
- IV: 10YR 4/1 gray silty clay
- V: 10YR 4/2 dark gray brown clayey silt
- VI: 10YR 4/2 dark gray brown hard-packed silty clay, with numerous brick chips
- VII: Densely packed brick rubble in 10YR 4/1 dark gray silty clay
- VIII: 10YR 3/1 very dark gray clay with some brick chips

Figure 38. Stratigraphic profile of Unit 1 at 16JE207, facing south.

Based on the historical documentation and on map reconstruction, in conjunction with the observed archeological remains, Site 16JE207 appears to be a multicomponent nineteenth century site. Probable components include the N. N. Destrehan gardens and structures (1820s-1840s), a portion of Bobb's Brickyard (1850s-1860s), and a possible mid-nineteenth century drainage feature. Because no antebellum brickyards have been examined archeologically in southeast Louisiana, archeological deposits at this site may provide important information about brickmaking in the region. If an historic drainage feature is present, its precise function should be determined and its architectural form recorded. Because much of the site is capped with 0.5 to 1.5 m of twentieth century fill, the full range, compilation, and research potential of components present cannot be verified during Phase I testing. More extensive archeological testing is needed to interpret the components of this site and to evaluate fully its significance.

Site 16JE208

Site 16JE208 consists of the remains of a nineteenth and early twentieth century wharf. It is located just above the waterline on the west (right descending) bank of the Mississippi River, about 150 m downriver from the Harvey Canal at Levee Station 4161 + 50. Riprap covers the slope from the toe of the levee down into the river; there is no batture. Grasses and shrubs sparsely cover the area. The surviving remnant of this wharf would be destroyed by levee enlargement.

The site was located and mapped during the initial pedestrian survey of the project area (Figure 39). No auger tests were placed in the site area because of the riprap covering. The site consisted of three parallel lines of squared posts perpendicular to the river, with horizontal boards connecting the posts in the two external rows. A third horizontal board is parallel to the river, cutting across the three rows (Figure 40). The upper portions of the posts and boards were missing and probably were removed during levee or revetment construction.

Site 16JE208 is depicted in its original state on the 1893 Mississippi River Commission Map (Figure 19) as a small wharf extending into the river. It was used by the Louisiana Cypress Lumber Company. Joseph Rathborne established this company in 1889, immediately downriver from the Harvey Canal. By the early 1890s, the company employed nearly 500 men and was the largest cypress mill in the world (Swanson 1975).

Only a portion of the wharf survived twentieth century levee and revetment construction, and that portion is damaged. While the Louisiana Cypress Lumber Company probably is a significant component of local and regional history, further archeological investigation of the pier remains at 16JE208 would not contribute significant additional information about the lumber company. Also, the wharf is incomplete and damaged; further recordation of the surviving portion would not add to the available data about late nineteenth and early twentieth century wharves.

Site 16JE209

Site 16JE209 is located on the west (right descending) bank of the Mississippi River, on the landward side of the artificial levee, at River Mile 98.1-R (Levee Station 4162 + 00). The site is within the upriver levee setback, which crosses land owned by Rathborne Properties, Inc. The portion within the project corridor extends from the toe of the levee south to a wooden fence and 50 m west from near a cleared lawn in the Rathborne Land Company. It covers about 0.25 acres and is covered with brush and young trees. The proposed levee setback in this area would destroy the site.

The site (Figure 39) was located during subsurface testing of the setback area. At that time, handmade and machine-made brick fragments were observed protruding from a shallow ditch running parallel to the levee. Mixed with the bricks, at the same stratigraphic position, were twentieth century artifacts such as pieces of a machine-made milk glass ointment jar. In addition, late nineteenth and twentieth century construction materials, such as bricks, cement, and bathroom tiles, were observed scattered throughout the woods and in the field to the immediate south. A shovel and auger test regime within the

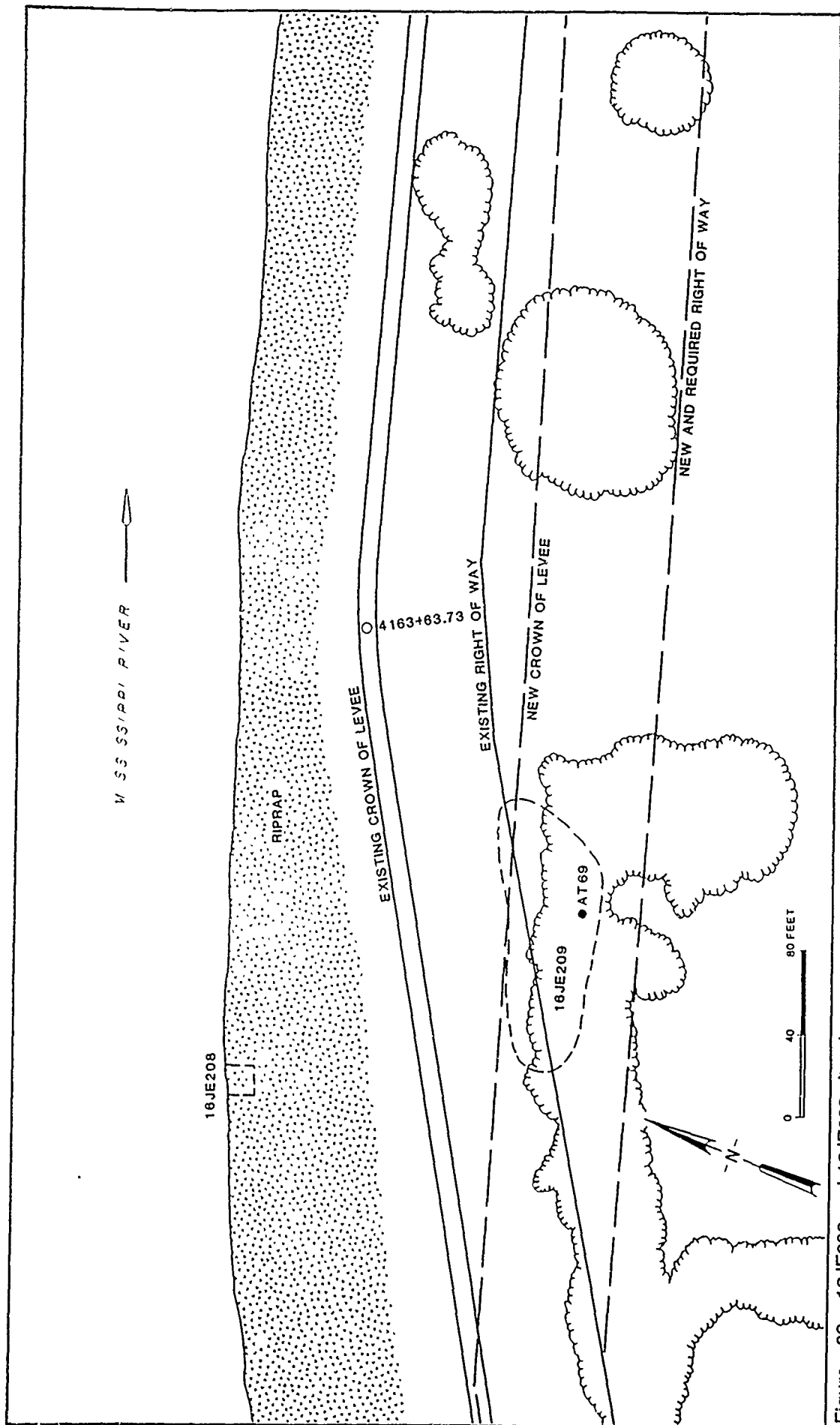


Figure 39. 16JE208 and 16JE209 site plans.

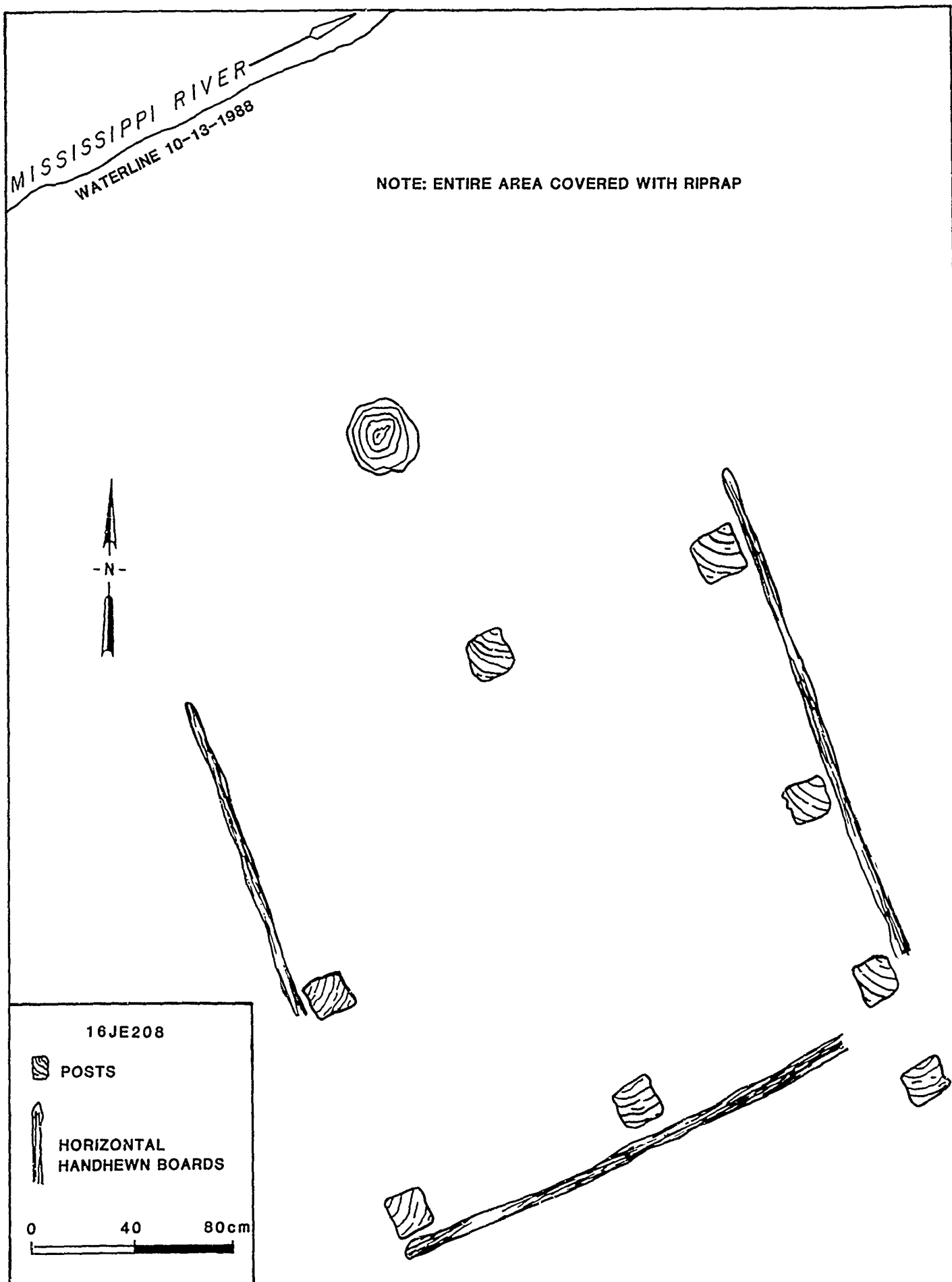


Figure 40. Visible wharf remains within 16JE208.

site area confirmed the presence of twentieth century cultural remains to at least 40 cm, with some brick chips and shell fragments below that depth (Figure 41). There was no evidence of in situ cultural deposits.

The land-use history of the site area indicates that houses were built in this locale during the late nineteenth century. The 1893 Mississippi River Commission map (Figure 19) illustrates three structures immediately south of the 16JE209 site area, a short distance east of the Harvey Canal, directly south of the wharf (16JE208) for the "Lumber Yards," the Louisiana Cypress Lumber Company. This company was established in 1889, and the buildings within the lumber yard complex were constructed by 1893. The 1937 Sanborn Insurance Map of the area (Figure 42) depicts these three houses as one-story shotgun doubles. These three houses had been torn down by the early 1970s.

Artifacts recovered from the site date from the late nineteenth and twentieth centuries and they can be associated with the three houses. These houses probably were built around 1890 by the Louisiana Cypress Company and may have housed employees of the company. The archeological deposits at 16JE209 were formed when the houses were demolished ca. 1970. This interpretation is supported by the lack of archeological integrity of the deposits, with nineteenth and twentieth century artifacts stratigraphically mixed. Double shotgun houses have been recorded adequately and many are preserved, including examples within the Gretna Historic District, one mile downriver. Because the site lacks archeological integrity and substantive research potential, it does not possess the quality of significance.

Site 16JE210

Site 16JE210 is located on the west (right descending) bank of the Mississippi River, at River Mile 97.9-R (Levee Station 4174 + 50). It is on the land side of the artificial levee, within a proposed setback area that passes through the north edge of the WITCO Chemical Company property. The area of 16JE210 within the project corridor is about 40 m long and 20 m wide and covers about 0.5 acres. The area is covered with tall weeds and young trees. Originally, a levee setback was designed to pass over the site; this setback has been eliminated from the levee improvement design. Therefore, the site probably will not be impacted by planned construction.

The site was located through a series of seven auger tests placed within and around the site area (Figures 43 and 44). In five of these auger tests, brick fragments were recovered from buried layers of dark gray and very dark gray silty clay, normally between about 60 cm and 120 cm below surface. Three of these auger tests contained packed layers of brick fragments, including one layer in one test that was too hard for the auger to penetrate. No artifacts other than handmade brick fragments were recovered from the historic layers within any of the auger tests.

The auger tests were augmented by a series of 26 probes. A large obstruction was isolated, and two auger tests were placed over this obstruction. Auger Test 79, encountered a deposit of packed brick between 50 to 60 cm below surface, and brick fragments to a depth of 1 m. Auger Test 80 encountered brick between 80 to 110 cm; the auger would not penetrate beyond this point. Based on the auger tests and probing, a large brick feature may be present in the middle of 16JE210.

A 1 x 1 m excavation unit was placed over the west edge of the brick obstruction. This unit was located to overlap the edge of the brick obstruction so that the exterior of any in situ brick feature could be recorded. The placement was determined based on a series of closely placed probes that passed over the edge of the obstruction. Extensive mixing was observed in the upper half of the unit. Thirteen strata were identified. Soil profiles were drawn of the north and east walls, and each stratum was described (Figure 45). Strata I through VIII were twentieth century layers containing mixed soils and modern artifacts such as machine-made bottles and bottle glass, wood, and plastic ribbon. Several of these strata contained petroleum byproduct wastes that were deposited during this century. Strata IX through XIII were comparatively homogeneous and contained very few artifacts other than handmade brick fragments. A fragment of annular decorated whiteware postdating 1820 was recovered from the lower half of Stratum IX; this artifact indicates that the deposit was formed during the antebellum period.

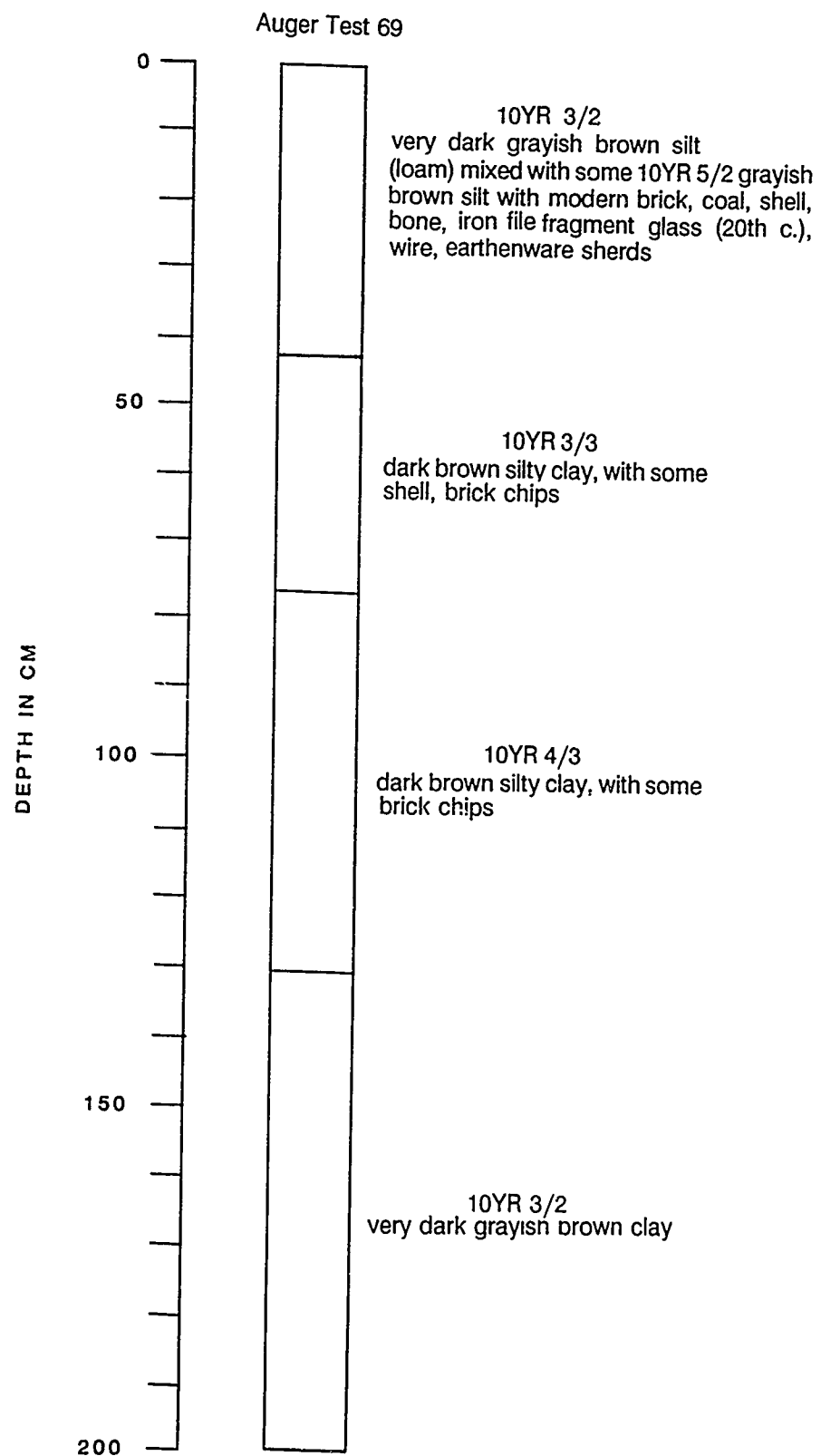


Figure 41. Auger test profile at 16JE209.

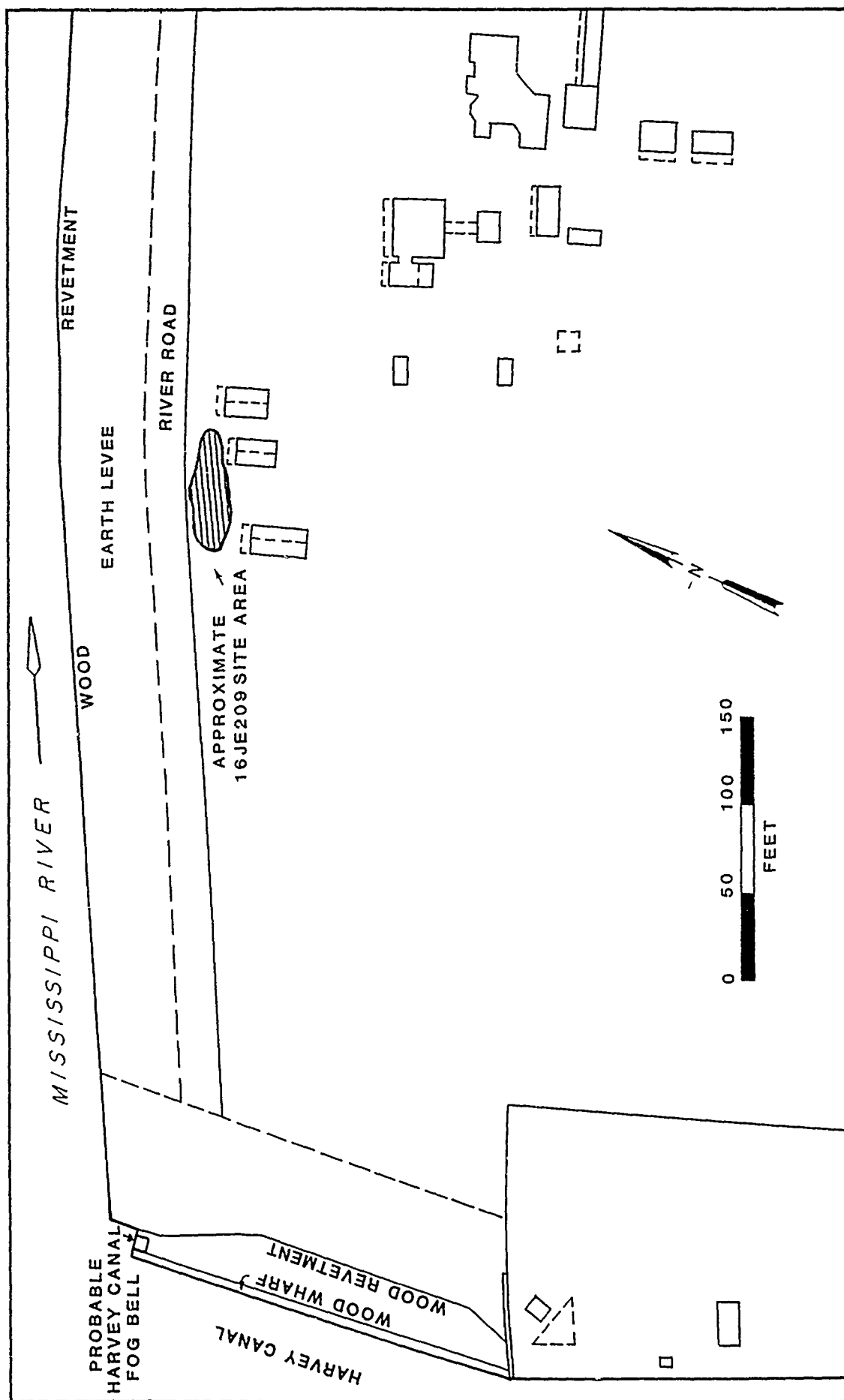


Figure 42. 1937 Sanborn Insurance Company Map (redrawn), showing approximate location of 16JE209, and the Harvey Canal Fog Bell.

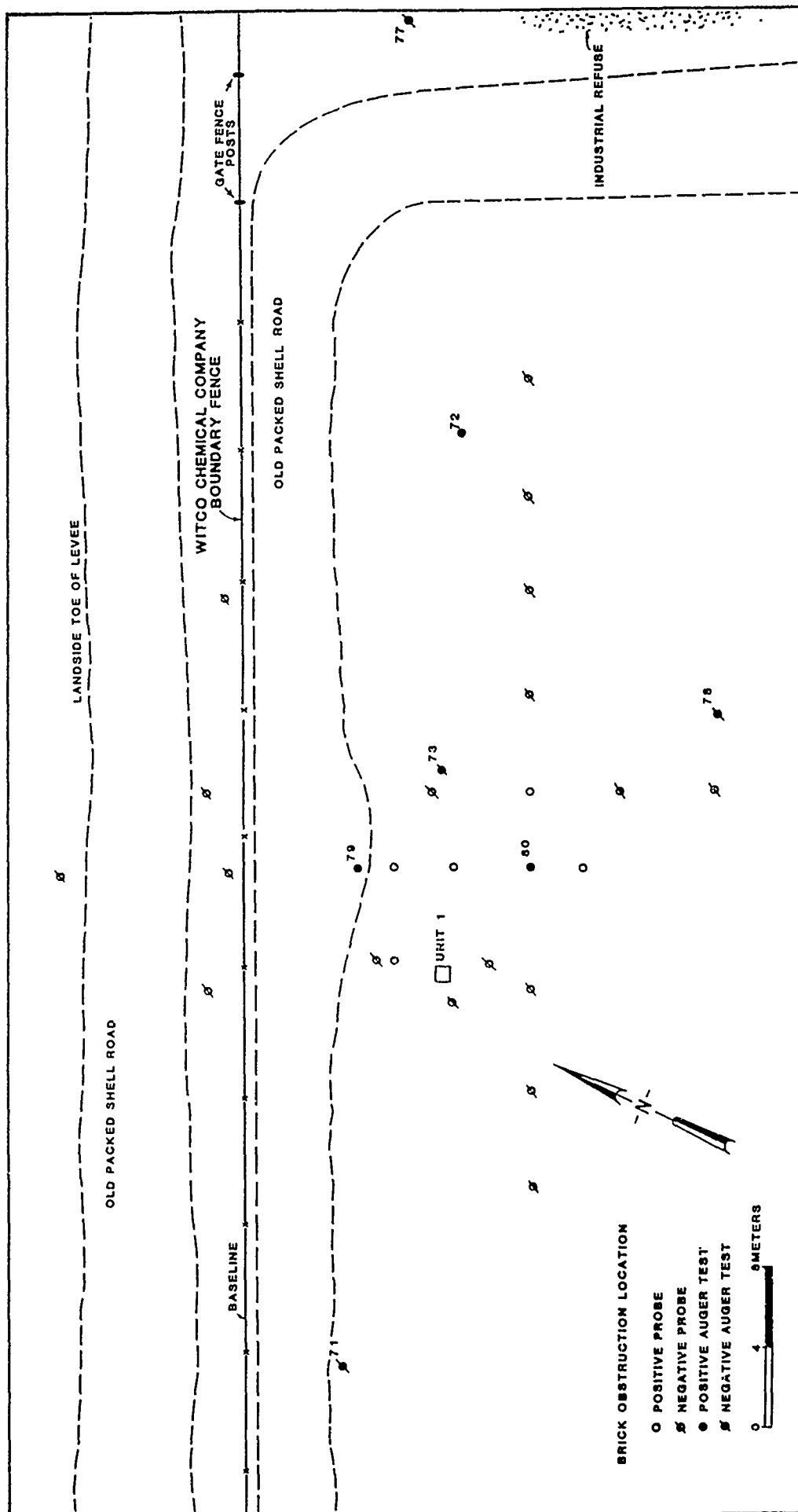


Figure 43. 16JE210 site plan.

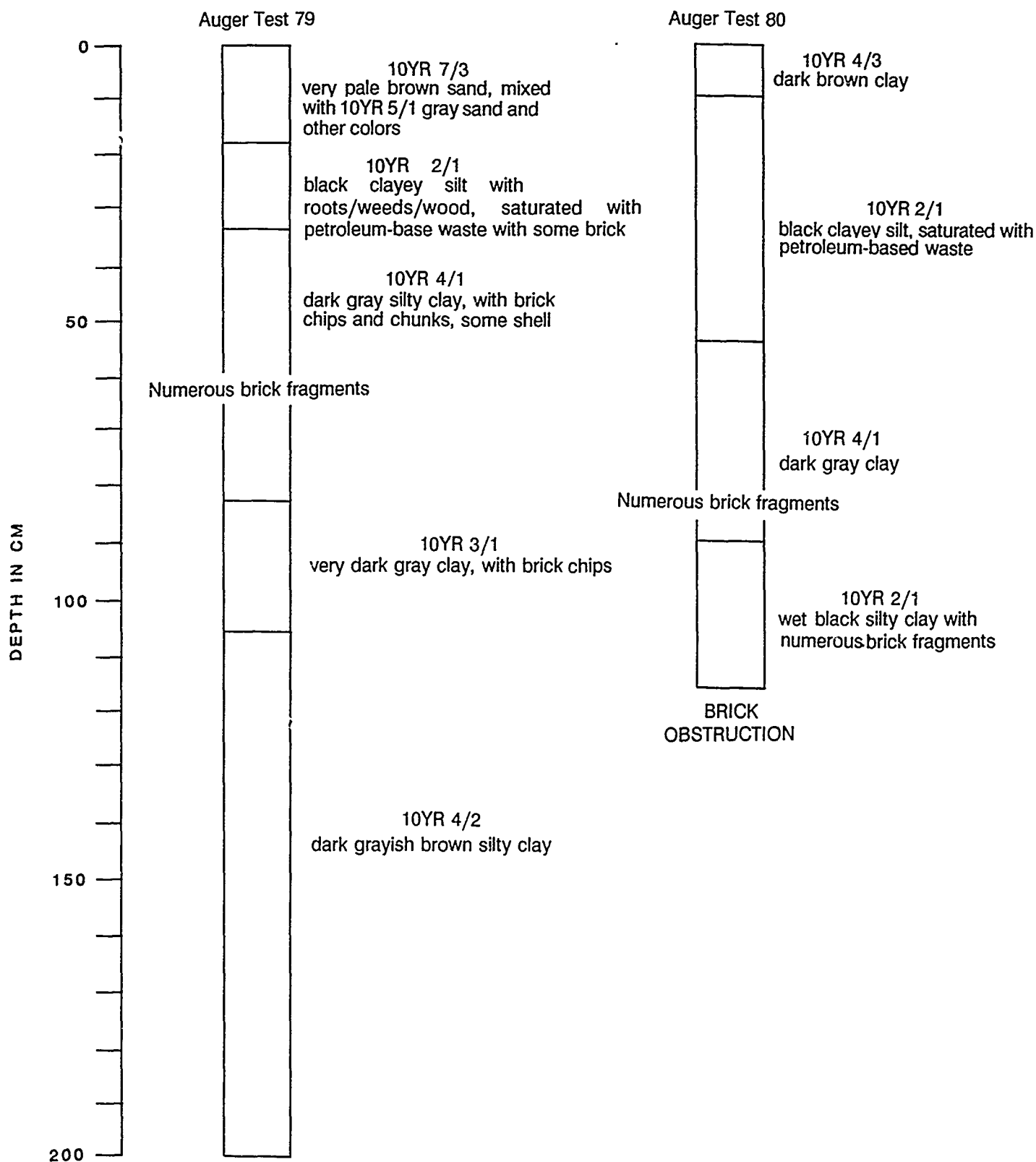
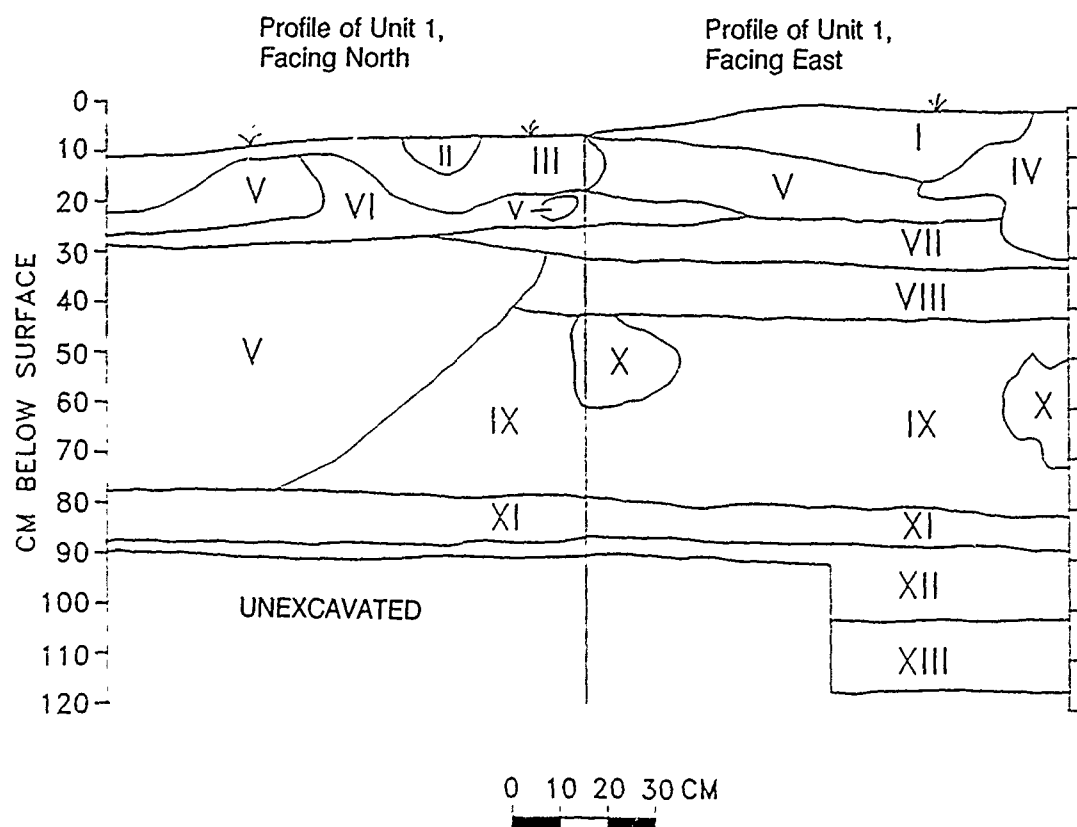


Figure 44. Auger test profiles at 16JE210.



- I: Mixture of 10YR 4/2 dark grayish brown silty sand, 10YR 4/4 dark yellowish brown sand and other colors, with coal and brick chip
- II: 10YR 2/2 very dark brown sandy clay
- III: 10YR 5/4 yellowish brown silty sand mixed with 10YR 2/2 very dark brown sandy clay, with cloth, and other modern artifacts
- IV: 10YR 2/1 black clay (with petroleum byproducts)
- V: 10YR 3/2 very dark grayish brown clay, with brick chips, shell, modern bottles in upper half of lower Stratum V deposit
- VI: 7.5YR 4/6 strong brown sand mixed with 10YR 5/4 yellowish brown sand, with shell
- VII: 10YR 2/1 black clay (with petroleum byproducts) 10YR 3/1 very dark gray clay, and other colors, with wood, shell, and brick
- VIII: 10YR 2/1 black silty clay (with petroleum byproducts) mottled, with modern glass, brick chips
- IX: 10YR 2/1 black clayey silt, with brick chips, some shell, and a piece of annularware
- X: 10YR 3/1 very dark gray silt, with brick chips
- XI: 10YR 2/1 black clayey silt, with many brick chips
- XII: 10YR 2/1 black clayey silt, with packed layer of brick fragments
- XIII: 10YR 3/1 very dark gray silty clay

Figure 45. Stratigraphic profile of Unit 1 at 16JE210, facing east and south.

Stratum XII was a layer of handmade brick rubble that extended across the entire unit. Within the southeast half of the unit, it was two to three bricks thick. The brick rubble layer tapered toward the northwest end of the unit, where the layer was only about one brick thick and loosely arranged. The auger test and probe results indicate that the brick rubble is present at least 10 m southeast and northeast, and that it ends a short distance to the west.

The site is located on WITCO Chemical Company property. The field in which Site 16JE210 is located has been used for years as a dumping ground for chemical wastes. In addition, a chemical waste "pond," which will be cleaned out within the next few years, is located near the 16JE210 area. Within each of the auger tests a layer of black fill, saturated with petroleum waste, was encountered. In Auger Test 80, 45 cm of the soft, semi-liquid waste were located above the dark gray clay layer containing the brick chips and the brick obstruction.

While no in situ foundation remains were located within the excavation unit, the presence of these remains is probable. The brick rubble may have come from outside the site itself, but it is more likely that it originated in the area containing the thick brick rubble deposits. Within many historic archeological sites, below ground structural remains survive unless the site area was used extensively after site formation. Based on historic maps, the site area has not been developed since the mid-nineteenth century. Since structural remains in the area probably were not removed to facilitate later development of the property, it is likely that in situ foundation remains still exist.

The 1820 *terminus post quem* date for the lower five strata suggests that the deposits were formed during the antebellum period, probably before 1860. Available historic maps show that the only structures in the vicinity of the site between 1819 and 1839 were a sugarhouse and a brick kiln. Through map reconstruction (Figure 3), the location of Site 16JE210 was plotted onto the 1834 Zimpel map (Figure 2). Assuming the Zimpel map is accurate, the site is located very close to the structure shown on the map just north of the A. Foucher, Jr., round sugarhouse. This structure also is depicted on the 1819 Bouchon plan (Figure 9), where it is labeled a brick kiln, and on the 1839 Springbett and Pilie map (Figure 4). These maps indicate that the brick kiln occupied the property for at least 20 years. In addition, two brick kilns were located on the property in 1773, according to the Records of the Cabildo. If one of these kilns is the one depicted on the maps as adjacent to the round sugarhouse, it occupied the area for more than 65 years. Little is known about late eighteenth and early nineteenth century brickmaking in the New Orleans area, and no antebellum brickyards have been excavated in southeast Louisiana. If in situ late eighteenth and early nineteenth century structural remains are present, they probably would form a significant archeological resource, containing important information about the early Louisiana brickmaking industry.

Site 16JE211

Site 16JE211 is located on the westbank batture of the Mississippi River, between Levee Stations 4224 + 00 and 4228 + 00. It is about 300 m downriver from the Gretna Ferry landing; it covers 120 m of the riverbank; and, it extends horizontally 10 to 20 m across the batture. The largest quantity of artifacts was discovered close to the river, with lesser quantities mixed with the riprap on the upper bank. Site 16JE211 covers an area of about 0.5 acres. The area adjacent to the river is cleared of most growth, while the upper bank portion of the site is covered with underbrush, bushes, and small trees. The planned levee enlargement would damage or destroy the site.

The site area was located during pedestrian survey of the project area (Figure 46). At that time, numerous handmade and machine made bricks were observed along the riverbank, mixed with numerous earthenware pipe-like fragments and some riprap. These bricks and pipe fragments continued up the riprap-covered bank in decreasing quantities.

Two auger tests (Figure 47) were placed on the upper bank to locate any intact cultural deposits associated with the bricks and pipes. The first of these contained modern debris to 62 cm below surface, at which point there was a layer of impenetrable asphalt. The second auger test contained modern debris near the surface, some shell and gravel between 40 to 85 cm, and no observed artifacts from 85 to 137 cm.

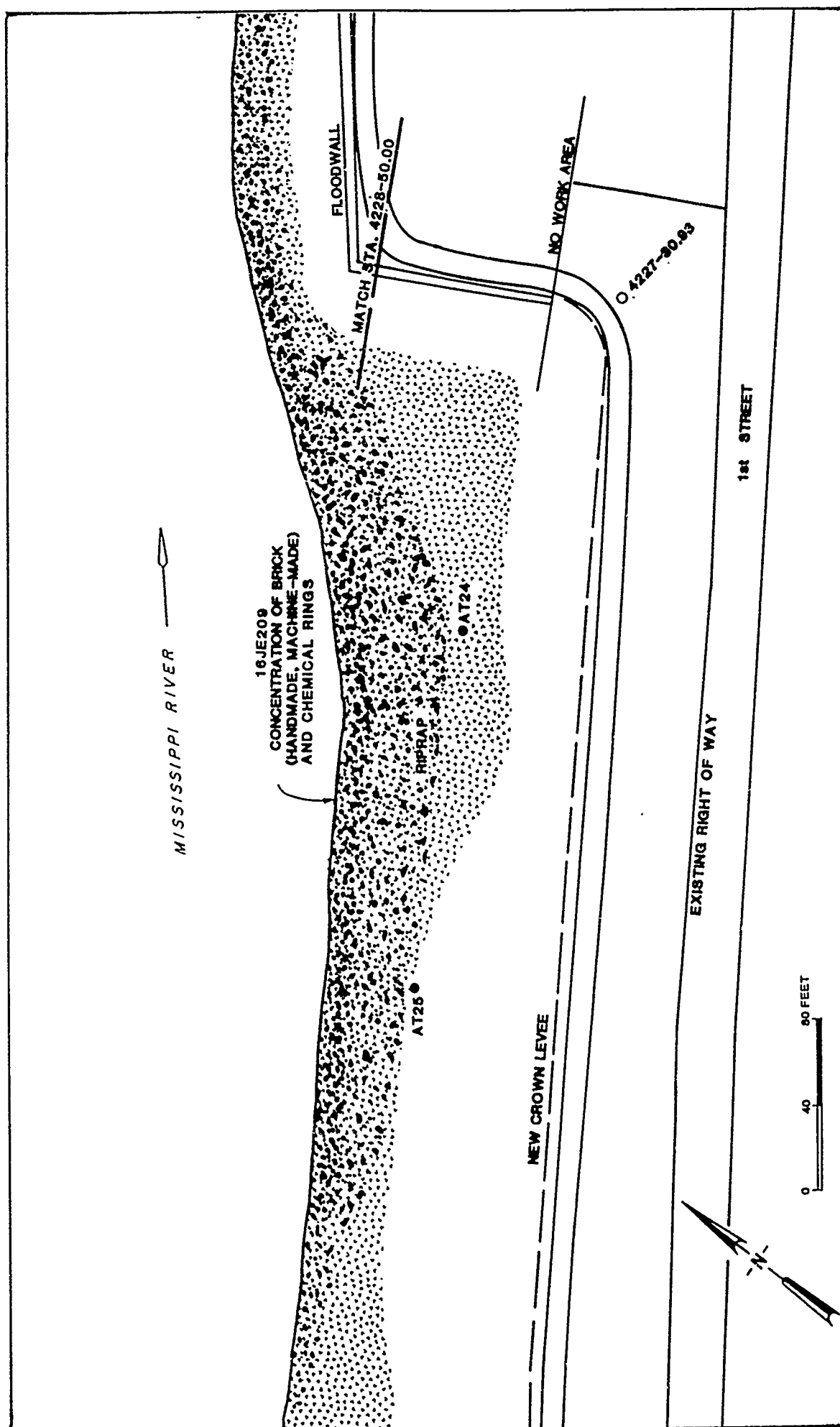


Figure 46. 16JE211 site plan.

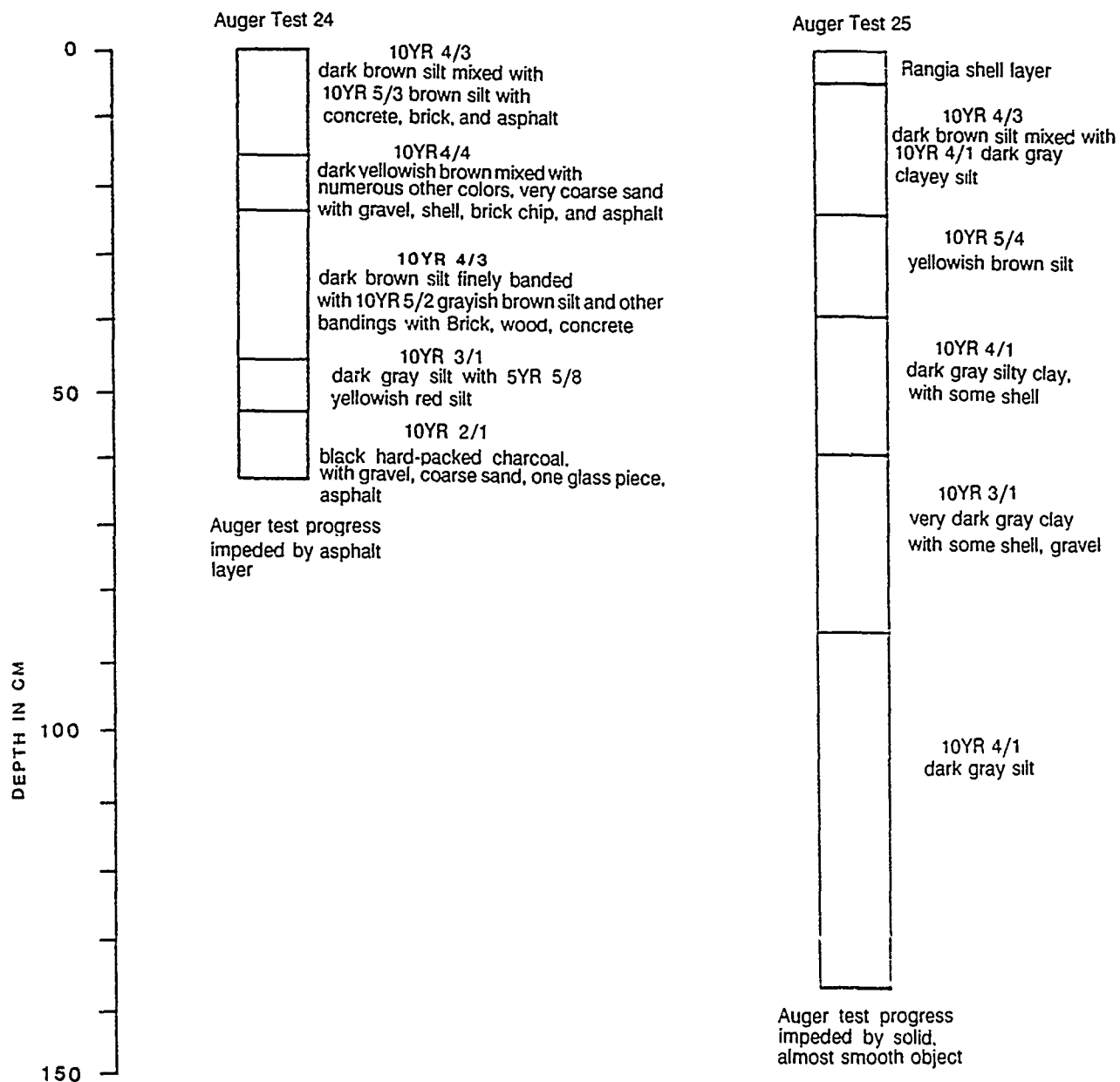


Figure 47. Auger test profiles at 16JE211.

A hard, smooth object, possibly stone or metal, stopped progress at that point. Neither of these auger tests encountered historic archeological deposits.

A number of the handmade and machine-made bricks were stamped with makers' marks. Several of the handmade bricks were stamped "N D H" with letters smaller than those found on bricks at Site 16JE207. Others were stamped with an "H." The machine-made bricks were primarily yellow fire bricks, and were marked "CHEMICAL NO. 1.," two varieties of "CHRISTY/ST. LOUIS," and "...OWARD/[ST. LOUIS]."

Numerous earthenware pipe fragments were observed and recovered from the site area (Figure 48). They were made in 7.5 cm (3") long segments with a 9 cm (3 5/8") diameter. The interior of each segment was constructed with twelve alternating long (2 cm) and short (1 cm) ribs, each running the length of the segment. Many were stamped "LACLEDE ST. LOUIS/PAT. MAR. 9, 1897" and "PAT. MAR. 9' 1897." According to patent records (United States Patent Office 1897:1515), Louis Deruelle received a patent (patent number 578548) in March 1897 for an "Apparatus For Making Sulfuric Acid"; the apparatus was built of earthenware pipes, or "chemical rings," of the type found at 16JE211. This product was manufactured by Laclede Fire Brick Manufacturing Company in St. Louis. Large quantities of sulfuric acid were used by both fertilizer and petrochemical manufacturers. The Davison Chemical Corporation, Davison-Pick Fertilizer Division, was located just northeast of the 16JE211 site area during the 1930s. The chemical rings probably were used by the plant for manufacturing sulfuric acid necessary to fertilizer production. In addition, the associated bricks, many of which were fire bricks and chemical bricks, probably derive from the fertilizer company, a northwest corner of which was destroyed prior to adjacent floodwall construction.

The nature of the archeological deposits at 16JE211 remains unclear. The presence of an asphalt obstruction in one of the auger tests may suggest the deposits were formed during revetment construction; portions of the Gretna Bend Revetment are constructed with asphalt (United States Army Corps of Engineers 1987:75). The deposits at 16JE211 also may have originated during levee construction, when a portion of the nearby Davison Chemical Corporation building was destroyed. The observed artifacts lack archeological integrity, and they do not possess the quality of significance.

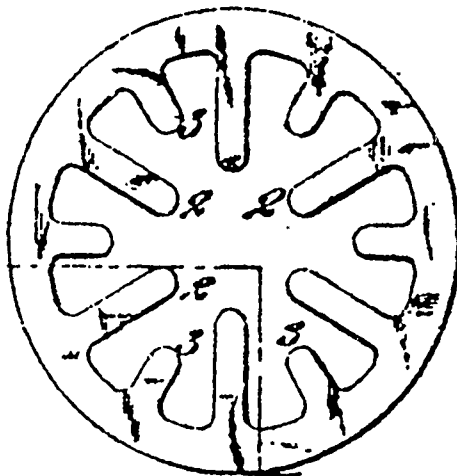
Site 16JE212

Site 16JE212 is located on the westbank batture of the Mississippi River, at Levee Station 4268 + 00. It occupies an area of approximately 20 x 60 m parallel to the river, and it covers about 0.3 acres. The riverside half of the site is wooded, with considerable underbrush, while the other half is covered with cut grass. A fleeting company operates just west of the site, and two grounded barges, used as wharves, are close offshore from the site area (Figure 49). Proposed levee enlargement could damage or destroy the site, although the 150 cm of overburden would provide a measure of protection.

The site was located through a series of nine auger tests placed along the batture within Block 23 of historic McDonoghville (Figures 3 and 50). In all of these auger tests, the upper 150 cm contained no artifacts except coal fragments. Within seven auger tests, varying quantities of pearlware, brick, coal, coal cinders, and charcoal were located between 150 to 250 cm below surface, with the majority located between 170 to 210 cm (Figure 49). No excavation units were placed in this site because of the extreme depth of the cultural deposits, which would require shoring of the units, and the potentially unstable nature of the site area batture. An excavation unit placed within the batture at 16JE212 could compromise the integrity of the adjacent levee system.

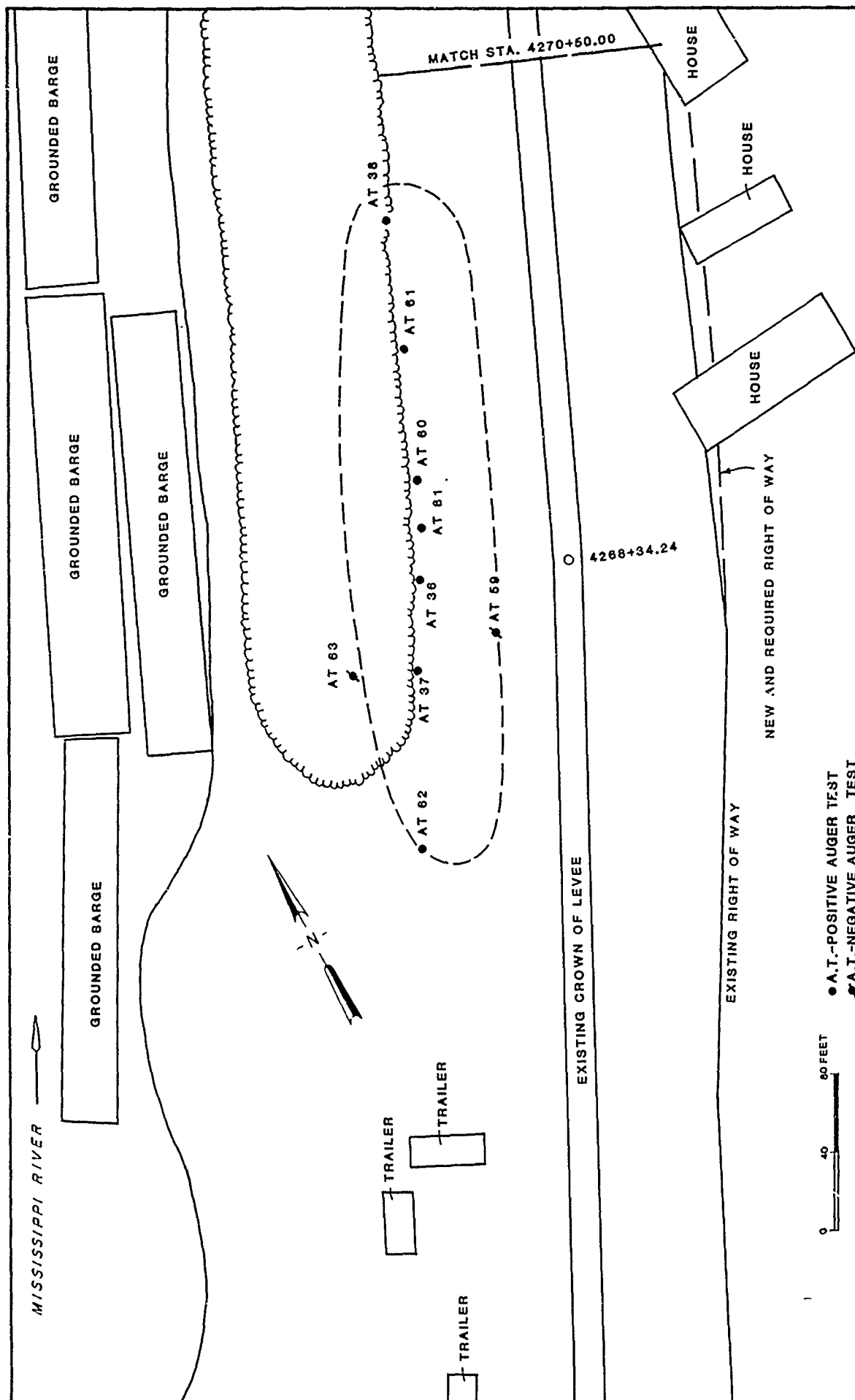
Although auger testing failed to locate any intact features, the presence of such features is likely. The consistent presence of the artifactual remains at a considerable depth over a fairly large area indicates that these artifacts may have a common point of origin, such as a building. While only a few diagnostic artifacts were recovered from the deeply buried deposits, these artifacts, three fragments of late pearlware, have a similar date range, circa 1820-1850. The thick deposits overlying the artifact-bearing layers have protected those layers from disturbance, increasing the likelihood of in situ cultural remains. While the auger tests provide information about the extent of the deeply buried cultural deposits, the very small area sampled by augers makes structural features during Level II survey unlikely.

578,548. APPARATUS FOR MAKING SULFURIC ACID. LOUIS DERUELLE, St. Louis, Mo., assignor to the Jacledé Fire Brick Manufacturing Company, same place. Filed Mar. 4, 1896. Serial No. 581,727. (No model.)



Claim.—An earthenware chemical ring comprising a cylindrical body and inwardly-projecting alternating long and short radial corrugations disconnected from each other so as to provide free flanges; substantially as described.

Figure 48. Apparatus for making sulfuric acid.



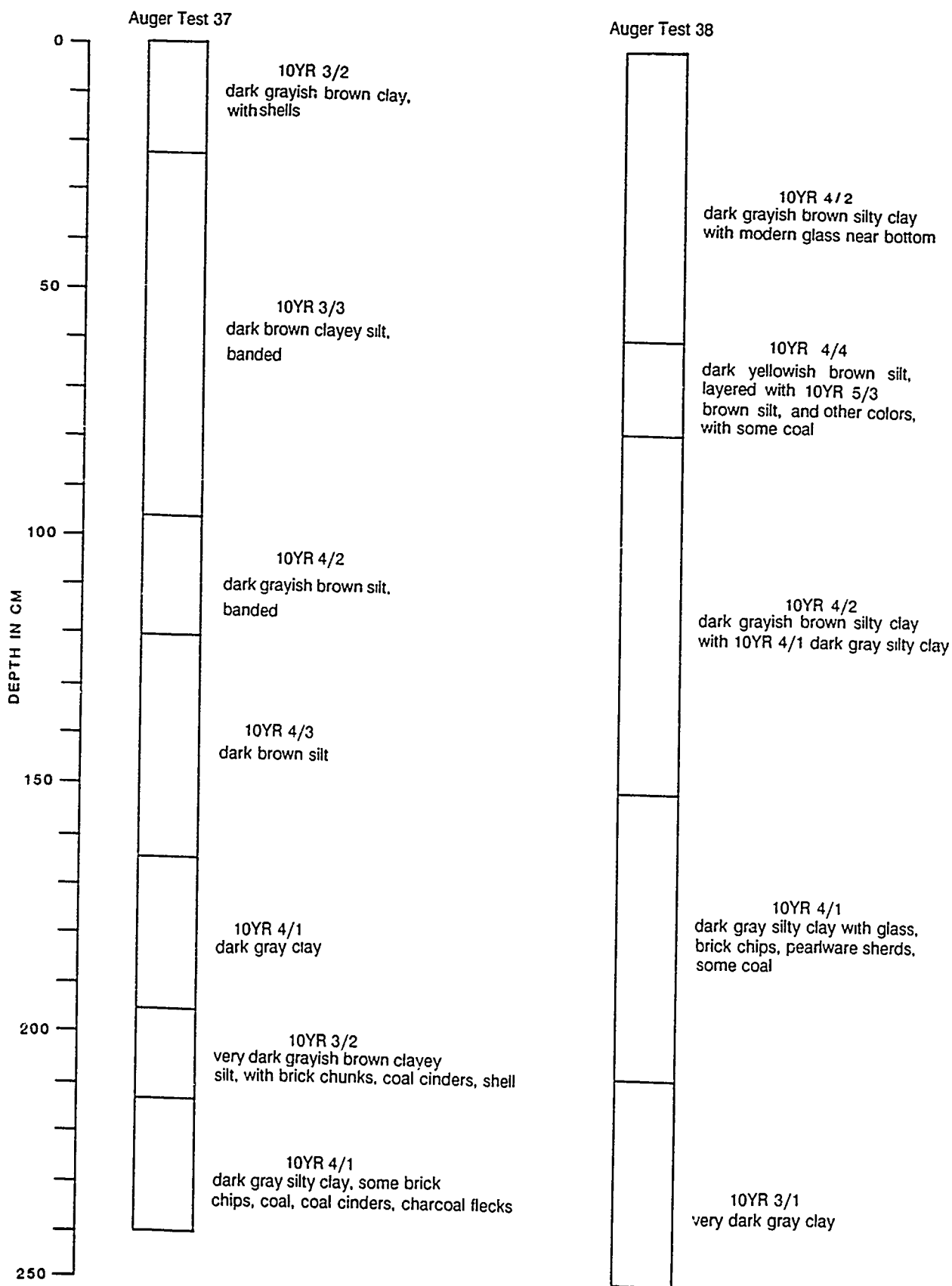


Figure 50. Auger test profiles at 16JE212.

As discussed in Chapter IV, McDonoghville was established in 1815 by John McDonogh as a community for low income families. It was populated during the nineteenth century by Free People of Color and by laborers, people who often are poorly documented. Archeological information about these people can provide valuable information, otherwise unavailable, about a little documented segment of society. Additional testing should occur to evaluate the quality of significance.

Standing Structures

The three historic standing structures within the impact corridor of the proposed project were inventoried, documented, and evaluated using the National Register criteria of significance (36 CFR 60.4). Recordation followed the format specified by the Louisiana Division of Historic Preservation and included the completion of a Historic Standing Structure Survey Form for each of the structures. Construction dates were determined by examining and interpreting modes and materials of construction and by determining stylistic periods. The extent of impact to these structures from the planned levee improvements is unclear.

The first structure inventoried is located at the downriver edge of the Harvey Canal (River Mile 98.2-R), in the north half of Section 1, T13S, R24E. This structure (SS-1) consists of the Harvey Canal Fog Bell, and its accompanying hammer assembly, light, and cement foundation. The 1.05 m diameter iron bell is embossed with the following inscriptions: "CAST BY THE CHAPLIN-FULTON MFG. CO. PITTSBURG PA 1898" on one side, and "U.S. LIGHT HOUSE ESTABLISHMENT/1898" on the other. An external electric-powered hammer assembly is suspended on a wooden frame. There is a wire fence on three sides of the bell assembly. The foundation is 3.84 m (north-south) by 3.42 m (east-west), and it is situated on the northeast edge of the Harvey Canal. A flashing light on top of a pole is located on the west side of the foundation, and an iron pole used for a windsock is a short distance to the northeast.

The current foundation structure was constructed after 1910. It is not depicted on a detailed 1910 plan of the properties downriver from the Harvey Canal (Figure 17), but it is shown on the 1937 Sanborn Insurance Company map of the area (Figure 42). According to Keith Alexander, the Lockmaster for the Harvey Canal (personal communication 1988), this bell originally was erected as a fog bell to guide the Louisiana Avenue Ferry across the Mississippi River during periods of low visibility. It also was used as a signal for regulating the flow of riverine traffic into the Harvey Canal. It currently is not used extensively. The bell will be moved from its present location into the Harvey Canal Lock office prior to planned modifications of the adjacent Harvey Canal guide wall.

Several modifications have been made to the structure since its construction. The light, a sign, and the fence have been added, and the original wood framework was replaced in recent years. The only original parts above the foundation are the bell and hammer assembly. The foundation is cracked and chipped, and it has been repaired superficially. These modifications have damaged the architectural integrity of the structure considerably. While virtually every historic bell has its own unique history that makes it important to individuals within a localized setting, this bell and its associated structure did not contribute significantly to the historic development of the region. In addition, it cannot be associated with significant local individuals, and numerous other similar bell and hammer assemblies have been preserved. The site has little research potential, and additional recordation would not provide information important for better understanding history.

The two other recorded historic standing structures are two adjacent houses located in Section 11, T13S, R24E (River Mile 96.3-R). One (SS-2) is a single family shotgun house located at 1011 Washington Street, in McDonoghville. It was constructed circa 1930-1945, and it was modified later with the addition of a section on the rear and of a cinder block porch. This frame house, with a mixture of asphalt shingle and board siding, has a gable tin roof. There is no unusual ornamentation. The house has little architectural integrity and it is not exemplary of an early twentieth century shotgun house.

The third historic standing structure within the project area is a wood frame double shotgun house (SS-3) located immediately south of SS-2, at 1017-1019 Washington Street, in McDonoghville. As with structure SS-2, this house was constructed ca. 1930-1945, and it has been modified extensively. A cinder

block porch and back room have been added, the original roof has been replaced, and the house has been modernized with aluminum siding and aluminum frame windows. The house has little historic structural integrity. Double shotgun houses are well documented, and many better examples have been preserved.

Summary

Field investigations within the Gretna Phase II Levee Enlargement Item project area resulted in the identification of six archeological sites and three historic standing structures. Three of the archeological sites, 16JE208, 16JE209, and 16JE211, were late nineteenth and early twentieth century sites with little or no archeological integrity and lacking substantive research potential. The other sites, 16JE207, 16JE210, and 16JE212, were nineteenth century sites with apparently good archeological integrity.

Archeological testing was performed at each of the latter three sites. Within Site 16JE207, a number of probes and auger tests were placed in the site, as was a 1 x 1 m excavation unit. Two, and possibly three, features were located during this testing, and intact historic deposits were discovered within the site. Site 16JE210, located within the WITCO Chemical Company property, was auger tested and probed to delineate site boundaries and to ascertain the nature of the site. Handmade brick, including brick rubble in an area at least 7 m wide and 15 m long, was located between 60 to 120 cm below surface. This area was covered with a varying thickness of petroleum-based chemical waste. An excavation unit was placed on the edge of the brick obstruction. In this unit, a deposit of handmade brick rubble was located that could be associated with in situ structural remains. Map reconstruction indicates that the site is in the vicinity of an historic brick kiln, which could date from the 1770s to 1840s. Site 16JE212 is a deeply buried nineteenth century site located through auger testing on the batture within historic McDonoghville. While little is known about this site, the presence of intact cultural features within the site is possible.

Three standing structures were recorded within the project area. These included a bell platform adjacent to the Harvey Canal (SS-1), a single family shotgun house (SS-2), and a double shotgun house (SS-3). None of these twentieth century structures possessed either historic architectural integrity or research potential; further recordation of the structures is unnecessary.

CHAPTER VII

LABORATORY ANALYSIS

Introduction

A total of 331 artifacts were recovered from archeological sites discovered during the Gretna Phase II Levee Enlargement survey. Artifacts recovered from the sites included 14 ceramic sherds, three miscellaneous architectural ceramics, 112 brick fragments, 37 whole or partial bricks, six earthen chemical rings, two asbestos shingles, one piece of concrete, three fragments of calcined clam shell mortar, one non-human bone remain, one piece of leather, one fruit specimen, 77 glass fragments, 34 metal artifacts, three shells, 20 pieces of coal, four cinder fragments, one unidentified stone, one charcoal fragment, 9 synthetic items, and one plastic button.

All artifacts were washed and sorted into their respective material categories. The artifacts were cataloged and encoded into a computerized site catalog to allow further manipulation of the data. The computerized site catalog is organized by category, functional group, type, and subtype. The first level, **category**, is based on the format used by the Louisiana Division of Archeology. The second level, **functional group**, is based on artifact group typologies established by South (1977). The third and fourth levels, **type** and **subtype**, are based on diagnostic attributes. The resulting code identifies the artifact down to the subtype level and allows for detailed pattern analysis.

The following discussion describes the artifacts collected from the six sites within the project area (16JE207, 16JE208, 16JE209, 16JE210, 16JE211, and 16JE212). Following this discussion, special attention is focused on the brick remains recovered from the six historic sites.

Site 16JE207

The 175 artifacts found at 16JE207 included primarily construction materials, 72 brick fragments, 25 whole or partial bricks, three pieces of calcined clam shell mortar, two asbestos shingles, and a piece of concrete (Table 5). Other artifacts recovered include one ceramic sherd, one tile, one piece of leather, one fruit specimen, 15 glass fragments, 20 metal fragments, one shell, 20 pieces of coal, two cinder fragments, nine synthetic artifacts, and one unidentified stone. Of the bricks collected, three were machine-made, eighteen were handmade, and four were brick wasters. Fifteen fragments of glass were collected, including one fragment of green, machine-made bottle glass with a post-1920 use popularity date (Table 6), and fourteen glass fragments with no diagnostic attributes. Among the non-diagnostic glass was one fragment of amber bottle glass, four pieces of clear bottle glass, seven pieces of window glass, and one fragment each of melted glass and safety glass. Metal artifacts included five pieces of non-electrical wire, one piece of slag, one spike, and three unidentified metal objects. Seven wire nails and three unidentified nails also were collected; the use popularity date range for wire nails is post 1870 (Table 6). Also recovered was one transfer printed whiteware sherd with a mean ceramic date of 1840. In the architectural ceramics category, one tile was found. In the faunal and floral categories, there were one piece of leather and one fruit specimen, and in the shell category there was one clam shell (*Rangia cuneata*). The stone material group included two pieces of cinder, twenty pieces of coal, and one unidentified stone. Nine specimens of synthetic material were collected: one fragment of nylon rope; two fragments of vinyl; one plastic bottle sealer; and five pieces of unidentified synthetic material.

Site 16JE208

One partial handmade brick with the maker's mark "H" was recovered from 16JE208.

Table 5

RECOVERED MATERIAL BY SITE WITHIN THE SURVEY AREA						
	<u>16JE207</u>	<u>16JE208</u>	<u>16JE209</u>	<u>16JE210</u>	<u>16JE211</u>	<u>16JE212</u>
<u>Ceramic Materials</u>						
Stoneware Domestic						
Brown, Albany Slip on Buff			1			
Grey, Salt Glazed Undecorated			1			
Pearlware						
Plain						3
Whiteware						
Annular				1		
Plain			2	3		
Transfer Printed	1		1			
Indeterminate Earthenware			1			
Miscellaneous Architectural Ceramics	1		2			
Earthen Chemical Ring					6	
<u>Construction Materials</u>						
Asbestos Shingle	2					
Brick						
Fragments	72			31		9
Machine-made, partial	1		1		5	
Machine-made, whole	2				1	
Waster, handmade	4				1	
Handmade, partial	12	1	1			
Handmade, whole	6				2	
Concrete	1					
Calcined Clam Shell Mortar	3					
<u>Faunal</u>						
Non-human bone			1			
Leather	1					
<u>Floral</u>	1					
<u>Glass</u>						
Machine-Made Bottle						
Amber				1		
Clear				3		
Green	1					
Milk Glass			1			
Pharmaceutical						
Clear				2		
Table Glassware						
Milk Glass			2			

	<u>16JE207</u>	<u>16JE208</u>	<u>16JE209</u>	<u>16JE210</u>	<u>16JE211</u>	<u>16JE212</u>
Unidentified Bottle Glass						
Amber	1			1		2
Aqua				1		
Clear	4		2	8	1	13
Light Green			13			
Dark Green			1	2		
Milk Glass			1			
Molded				1		
Melted Glass	1					
Safety Glass	1					
Window Glass	7		3			
Unidentified Glass						
Clear			1			1
Milk Glass			2			
<u>Metal</u>						
Bolt			1			
Non-Electrical Wire	5					
Slag	1					2
Spike	1		1			
Tin Can						1
Unidentified Metal Object	3		1			3
Nails						
Cut			1			
Wire	7					
Unidentified	3		2	1		1
<u>Shell</u>						
Oyster				1		
Rangia	1					1
<u>Stone</u>						
Cinder	2					
Coal	20					2
Unidentified Stone	1					
<u>Wood</u>						
Charcoal						1
<u>Other</u>						
Plastic Button				1		
Synthetics	9					
TOTAL	175	1	43	57	16	39

Table 6

 CHRONOLOGY OF CERAMIC TYPES, GLASS TYPES, AND NAILS WITHIN THE SURVEY AREA

<u>Material Type</u>	<u>Use Popularity Date Range</u>	<u>Mean</u>	<u>Date Source</u>
Ceramic Ware and Decoration			
Domestic Brown Stoneware, Albany Slip on Buff	1810-1900	1855	Goodwin, Yakubik, and Gendel 1984
Domestic Grey Stoneware, Grey Salt Glazed, Undecorated	1790-1910	1850	Ketchum 1971
Pearlware, Plain	1780-1830	1805	South 1977
Whiteware, Plain	1820-1900	1860	South 1977
Whiteware, Transfer Printed	1820-1860	1840	Miller 1980/South 1977
Diagnostic Glass Attributes			
Machine-Made	Post 1920		Munsey 1970
Nails			
Cut	1815-1890	1853	Nelson 1963
Wire	Post 1890		Nelson 1963

Site 16JE209

Forty-three artifacts were found at 16JE209 (Table 5). Six ceramic sherds collected include domestic stoneware, three sherds of whiteware, and one sherd of an indeterminate earthenware. The stoneware was represented by one domestic brown, albany slip on buff sherd, and one undecorated salt glazed domestic gray sherd. Two plain and one transfer printed sherd made up the whiteware group. Chronological information for these sherds is included in Table 6. Two architectural ceramics were recovered, both from a possible ceramic door. Construction materials collected at 16JE209 included one machine-made brick and one handmade brick. One faunal specimen was found, a piece of unidentified non-human bone. There were 26 fragments of glass including one fragment of machine-made milk glass, two pieces of milkglass tableware milk, 17 pieces of unidentified bottle glass, three pieces of window glass, and three pieces of unidentified glass. Colors for the unidentified bottle glass and unidentified glass are listed on Table 5. One piece of unidentified clear bottle glass contained the maker's mark "Hoyt's," indicating either E. W. Hoyt & Co., Lowell, Mass, Hoyt & Co., Philadelphia, or The Hoyt Chemical Company, Indianapolis (Fike 1987). E. W. Hoyt & Co. produced "Hoyt's German Cologne" beginning in 1871. In the 1960s, J. Strickland & Co. bought the product and in 1986 sold it as "Hoyt's Cologne" (Fike 1987). E. W. Hoyt & Co.'s competition was Hoyt & Co. from Philadelphia. This company produced "Dime Cologne" beginning in 1863 (Fike 1987). The Hoyt Chemical Co. produced "Hoyt's Poisoned Blood Cure" in 1907 (Fike 1987). Six metal artifacts were recovered including one bolt, one spike, one unidentified metal object, one cut nail, and two unidentified nails. The use popularity date for cut nails is 1815-1870, with a mean date of 1843 (Table 6).

Site 16JE210

Fifty-seven artifacts were recovered from 16JE210 (Table 5). Four ceramic sherds, all whiteware, were found. These included three plain whiteware sherds and one sherd of annular whiteware. All four have the same use popularity date range as plain whiteware, which is 1820 to 1900, with a mean date of 1860 (Table 6). One plastic button was found. In the construction material category, there were 31 brick fragments. Four machine-made (Table 6) glass fragments were found; three were clear and one was amber. Two pharmaceutical bottles, one fragment of molded glass, and twelve fragments of unidentified bottle glass completed the glass artifact category (Table 5). One metal artifact, an unidentified nail, and one oyster shell were found.

Site 16JE211

Sixteen artifacts were found at 16JE211 (Table 5), including six ceramic earthen chemical rings used in making sulfuric acid, each stamped with the patent date "March 9, 1897" (see Chapter VI). Three were stamped with the words "LACLEDE ST. LOUIS." Nine bricks, including six machine-made, two handmade, and one brick waster, were found, as was one fragment of clear, unidentified bottle glass.

Site 16JE212

Thirty-nine artifacts were recovered from 16JE212 (Table 5). Included within this assemblage were three pieces of plain pearlware, with a use popularity date ranging from 1780 to 1830 and with a mean date of 1805 (Table 6). In the construction material category, there were nine brick fragments. Fifteen pieces of unidentified bottle glass were found: 13 clear fragments, two amber fragments, and one clear fragment of unidentified glass. Seven metal artifacts included two pieces of slag, one piece of tin can, three unidentified metal objects, and one unidentified nail. One *Rangia* shell, two pieces of coal, and one piece of charcoal comprised the shell, stone, and wood material classes, respectively.

Bricks Recovered from the Six Sites

Bricks commonly are found on industrial and residential historic archeological sites in south Louisiana. They characteristically may appear as parts of features such as floors, walls, foundations, and rubble fill. Bricks have been manufactured in southern Louisiana since the earliest colonial period. Bricks found in the City of New Orleans represent distinct traditions (Poplin and Goodwin 1988; Servat 1976; Shenkel and Beavers 1978). In addition to bricks manufactured locally, imported bricks have been recovered at antebellum plantation sites (Goodwin, Gendel et al. 1983). At this time, however, no reliable technique exists for accurately dating bricks when other dateable artifact classes are not present. Compounding this problem are other difficulties, such as the common practice of brick reuse, the variability in brick morphology, and the effects of post depositional processes (Goodwin, Gendel et al. 1983; Poplin and Goodwin 1988).

Brick specimens collected from 16JE207, 16JE208, 16JE209, and 16JE211 provided metric and non-metric attribute data used in furthering the ongoing analysis of brick attributes. Thirty-seven whole or partial bricks and 112 brick fragments were recovered from sites within the survey area. Of the 37 whole or partial bricks, 22 were handmade, 10 were machine-made, and 5 were brick wasters. Twenty-five bricks were recovered from 16JE207, one from 16JE208, two from 16JE209, and nine from 16JE211. Brick fragment counts appear in Table 5. Attribute data recorded for both whole and partial bricks included metric data (length, width, thickness), Munsell color designations, hardness values derived from the Mohs test, presence or absence of glaze and mortar, and recordation of maker's marks (Tables 7 and 8). Complete metric data were unavailable on some of the partial bricks. Also, the small size of the sample should be kept in mind when making comparisons.

Brick specimens from 16JE207 included twelve partial handmade bricks, six complete handmade bricks, two complete machine-made bricks, one partial machine-made refractory brick, and four handmade brick wasters. The average dimensions of the handmade bricks were 20.7 cm (n=8) x 9.2 cm (n=16) x 6.0 cm (n=18). Machine-made bricks averaged 20.95 cm (n=2) x 10.45 cm (n=2) x 5.85 cm (n=2). The machine-made refractory brick measured 22.5 cm in length and 6.0 cm in thickness. Metric attribute data on the handmade brick wasters varied (Table 7).

Of the 18 handmade bricks recovered from 16JE207, eight had makers' marks. One partial Table brick displayed the initials "...LF" and four specimens were stamped with the initials "NDH." The meaning of these initials remain unclear. The final three bricks had all or part of the mark "B.R.B.YD," the last three initials possibly represent the word, "brickyard." The entire translation is not known. The partial brick marked "...LF" was yellow and had a Mohs value of 3.5. No glazing was present. Specimens stamped "NDH" had Mohs values of 3.5. The letter "N" in the maker's mark "NDH" was reversed on three of the four samples, and two of the bricks with a reversed "N" had non-decorative glazing. Munsell colors varied (Table 7). There were no significant metric differences among the "NDH" bricks. Three bricks with all or part of the maker's mark "B.R.B.YD." came from the late nineteenth/early twentieth century component of 16JE207. Calcined clam shell mortar adhered to one example; glazing was absent from all. The three "B.R.B.YD." bricks were red, and their Mohs values ranged from less than 1 to 2.5. There were no significant differences in metric data among the three. The Mohs values of the "B.R.B.YD." bricks were below the Mohs values of the "NDH" bricks. The lowest Mohs values for all of the 16JE207 handmade bricks were found among the late nineteenth/early twentieth century component. No significant differences in metric attributes were found between the late nineteenth/early twentieth century component and the other 16JE207 handmade bricks. Excluding the handmade brick with a Mohs value of less than one, the range of Mohs values for all of these 16JE207 handmade bricks was 1.5 to 4.5, with an average Mohs value of 3.0. Munsell colors for the handmade examples varied (Table 7).

Specimen No. 6, a handmade brick from 16JE207, had grooves on both faces parallel to the long axis of the brick. These grooves may have served a decorative function (Joe Englert, Acme Brick, Louisiana Concrete Products, personal communication 1988). A fingerprint remained on one face.

Two machine-made bricks were found in the late nineteenth/early twentieth century component of 16JE207. The two displayed no evidence of glazing or adherence of mortar. One of the bricks was marked

Table 7

BRICKS BY SITE WITHIN THE SURVEY AREA

Brick No.	Length (cm)	Width (cm)	Thickness (cm)	Munsell	Hardness (Mohs Scale)	Glazing	Mortar	Makers' Mark	Comments
SITE 16JE207									
1	—	9.8	5.2	10YR 8/8 yellow	3.5	---	---	"...LF"	handmade
2	—	9.3	6.0	7.5YR 4/2 dark brown	3.5	---	---	"NDH"	handmade, makers' mark 10.2cm x 2.7cm
3	19.5	9.0	6.0	5Y 4/1 dark gray	3.5	present	---	"NDH"	handmade, letter "N" is reversed, makers' mark 10.5cm x 2.7cm
4	—	8.8	6.2	5YR 4/4 reddish brown	3.5	---	---	"NDH"	handmade, letter "N" is reversed, makers' mark 10.8cm x 2.7cm
5	20.8	8.3	6.2	7.5YR 5/4 brown and 10YR 4/2 dark grayish brown	3.5	present	---	"NDH"	handmade, letter "N" is reversed, makers' mark 11.2cm x 2.3cm
6	20.3	8.0	5.3	5YR 4/4 reddish brown	3.5	---	---	---	handmade, has grooves on both faces parallel to the long axis of the brick; finger print marks on one face
7 Brick a Brick b	— —	9.5 8.8	5.7 5.7	7.5YR N 4/ dark gray and 5Y 5/3 olive	3.5	present	---	---	waster, handmade, consists of 2 partial bricks (a and b) melted together
8	—	9.5	5.7	5YR 5/6 yellowish red and 5YR 4/2 dark reddish gray	3.5	---	---	---	handmade

Brick No.	Length (cm)	Width (cm)	Thickness (cm)	Munsell	Hardness (Mohs Scale)	Glazing	Mortar	Makers' Mark	Comments
9	21.5	9.0	6.1	5YR 4/4 reddish brown and 10YR 5/1 gray	3.5	---	---	---	handmade
10	21.5	9.3	6.2	5YR 5/4 reddish brown	2.5	---	---	---	handmade
11	21.0	10.0	6.7	5YR 6/8 reddish yellow	2.5	---	---	---	handmade
12	20.7	9.7	6.3	2.5YR 5/8 red	2.5	---	---	---	handmade
13	---	9.7	6.1	5YR 5/6 yellowish red and 2.5YR 5/8 red	2.5	---	---	---	handmade
14	---	8.3	6.4	7.5YR 5/4 brown, 10YR 4/2 dark grayish brown, and 2.5YR 4/2 weak red	3.5	---	---	---	waster, handmade
15	19.3	9.0	5.7	2.5Y 5/2 grayish brown, 5Y 4/2 olive gray, and 5YR 6/3 light reddish brown	3.5	present	---	---	waster, handmade
16 entire waster 1 brick 1 brick	33.0 --- ---	--- 8.8 ---	23.5 6.3 6.3	10YR 5/2 grayish brown, 10YR 4/2 dark grayish brown, 2.5Y N 4/ dark gray, 5Y 5/2 olive gray, 5Y 4/2 olive gray, and 10R 4/3 weak red	Ranges from 3.5-4.5	present	---	---	waster, handmade consists of 8-10 bricks, melted together; metric data measurable on two specimens from the total mass
17	---	9.3	6.3	2.5YR 4/6 red and 2.5YR 4/8 red	2.5	---	---	"B.R.[B.YD.]"	handmade; specimen nos. 17-20, 36-37 are from the late 19th/early 20th century component of 16JE207
18	20.3	9.3	6.3	2.5YR 5/8 red	<1	---	present	"B.R.B.YD."	handmade
19	---	9.5	6.3	2.5YR 4/6 red	1.5	---	---	"B.R.B.YD."	handmade
20	20.9	10.4	5.7	10YR 5/4 yellowish brown	3.5	---	---	---	machine-made

Brick No.	Length (cm)	Width (cm)	Thickness (cm)	Munsell	Hardness (Mohs Scale)	Glazing	Mortar	Makers' Mark	Comments
21	—	9.3	6.0	10R 5/4 weak red, 5Y 7/8 yellow, 10YR 3/2 very dark grayish brown, and 5YR 4/3 reddish brown	2.5	---	---	---	handmade
22	—	—	5.6	5YR 5/6 yellowish red	4.5	---	---	---	handmade
23	—	—	6.0	10R 4/6 red and 7.5YR 5/4 brown	2.5	present	---	---	handmade
36	21.0	10.5	6.0	5YR 4/4 reddish brown	3.5	---	---	"SALMEN"	machine-made
37	22.5	—	6.0	7.5YR 6/6 reddish yellow	4.5	---	---	"SIDE SKEW"	machine-made, possible refractory brick, 45° angle
SITE 16JE208									
33	—	9.0	6.3	2.5YR 5/4 reddish brown	3.5	present	---	"H"	handmade
SITE 16JE209									
34	—	9.0	—	5YR 4/4 reddish brown	3.5	present	---	---	handmade
35	—	11.1	5.0	7.5YR N 5/ gray, 7.5YR N 7/ light gray, and 10YR 6/4 light yellowish brown	4.5	---	---	"[CHRI]STY 1 [ST. LOUIS]"	machine-made
SITE 16JE211									
24	20.9	10.2	5.6	5YR 3/3 dark reddish brown and 2.5YR 5/2 weak red	4.5	present	---	"CHEMICAL NO. 1."	machine-made
25	—	10.8	6.2	5YR 6/8 reddish yellow	3.5	---	---	"...Y ST. LOUIS"	machine-made
26	—	10.8	6.1	10YR 7/8 yellow	4.5	---	---	"[H]OWARD [ST. LOUIS]"	machine-made
27	—	10.9	6.2	2.5YR 6/6 light red and 10YR 6/4 light yellowish brown	4.5	---	---	"[CHRI]STY [ST.] LOUIS"	machine-made
28	—	11.0	6.0	2.5YR 6/4 light reddish brown and 2.5Y 7/4 pale yellow	3.5	---	---	"[CHRI]STY ST. LOUIS"	machine-made

<u>Brick No.</u>	<u>Length (cm)</u>	<u>Width (cm)</u>	<u>Thickness (cm)</u>	<u>Munsell</u>	<u>Hardness (Mohs Scale)</u>	<u>Glazing</u>	<u>Mortar</u>	<u>Makers' Mark</u>	<u>Comments</u>
29	20.0	8.1	5.8	5YR 5/4 reddish brown, 10YR 4/2 dark grayish brown, and 10YR 3/2 very dark grayish brown	3.5	---	---	"H"	waster, handmade
30	20.5	9.4	5.8	5YR 5/4 reddish brown	4.5	present	---	"H"	handmade
31	21.0	9.2	6.1	5YR 5/4 reddish brown	3.5	present	---	"NDH"	handmade; makers' mark 7.6cm x 2.4cm, smaller than those on Bricks 2-5
32	---	9.7	6.7	10YR 5/4 yellowish brown	3.5	---	---	"ST. JOE"	machine-made; moulded colonial face brick made using soft mud process; black flecks in clay

Table 8

BRICK ATTRIBUTES BY SITE AND FORM

	SITE 16JE207		SITE 16JE208		SITE 16JE209		SITE 16JE211	
	Handmade	Machine-made	Handmade	Machine-made	Handmade	Machine-made	Handmade	Machine-made
No. of bricks averaged in length	(n=8)	(n=2)	---	---	---	---	(n=2)	(n=1)
Range	(19.5cm-21.5cm)	(20.9cm-21.0cm)					(20.5cm-21.0cm)	
Average length	20.7cm	20.95cm	---	---	---	---	20.8cm	20.9cm
No. of bricks averaged in width	(n=16)	(n=2)	(n=1)	---	(n=1)	(n=1)	(n=2)	(n=5)
Range	(8.0cm-10.0cm)	(10.4cm-10.5cm)					(9.2cm-9.4cm)	(10.2cm-11.0cm)
Average width	9.2cm	10.45cm	9.0cm	---	9.0cm	11.1cm	9.3cm	10.7cm
No. of bricks averaged in thickness	(n=18)	(n=2)	(n=1)	---	---	(n=1)	(n=2)	(n=5)
Range	(5.2cm-6.7cm)	(5.7cm-6.0cm)					(5.8cm-6.1cm)	(5.6cm-6.2cm)
Average thickness	6.0cm	5.85cm	6.3cm	---	---	5.0cm	5.95cm	6.0cm
Total number of bricks in site ²	18	2 ³	1		1	1	2	5

	SITE 16JE207		SITE 16JE208		SITE 16JE209		SITE 16JE211	
	Handmade	Machine-made	Handmade	Machine-made	Handmade	Machine-made	Handmade	Machine-made
No. of bricks averaged in Mohs Test value	(n=17)	(n=2)	(n=1)		(n=1)	(n=1)	(n=2)	(n=5)
Range	(1.5-4.5)						(3.5-4.5)	(3.5-4.5)
Average value	3.0 ⁴	3.5	3.5	---	3.5	4.5	4.0	4.1
No. of brick wasters	(n=3) ⁵						(n=1)	
Average brick waster Mohs Test Value								
	3.5		---	---			3.5	---
Refractory brick (#37) Mohs Test value		4.5						

¹St. Joe brick not included (refer to Table 7)

²Brick wasters excluded in total

³Refractory brick (#37) excluded in total

⁴Specimen #18 was not included

⁵Specimen #16 was not included

"SALMEN," and both had Mohs values of 3.5. The "SALMEN" brick may have come from the former Salmen Brick & Lumber Company of Slidell, Louisiana (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988). The Salmen Brick and Lumber Company became the Schneider Brick and Tile Company when Fritz Salmen sold his company to the Schneider family. B. A. Schneider was president, and his brothers C. W. Schneider and M. P. Schneider were vice president and secretary-treasurer, respectively (Brick and Clay Record 1937; information provided by the Sandra Pichon, St. Joe Brick Works, Inc.). The Schneider family already owned the St. Joe Brickyard; Peter W. Schneider, father of the new owners of Salmen, had acquired the St. Joe Brickyard in 1891. The two brick companies were operated as separate entities, however (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988).

The clay in Slidell that was used for the bricks at the Schneider Brick and Tile Company had unusual qualities. It could withstand high temperatures even though it was not considered a fire clay; it expanded when fired; and, it became lighter after firing. A "most remarkable color range" was achieved by varying the firing temperature (Brick and Clay Record 1937 and 1938). The lightness of the bricks made it possible to use the bricks in the manufacture of various clay products such as hollow tile; it also meant lower freight charges (Brick and Clay Record 1937 and 1938). The ability of the clay to expand during firing compensated for shrinkage in the drying process (Brick and Clay Record 1937 and 1938).

The remaining machine-made brick from 16JE207 also belonged to the late nineteenth/early twentieth century component of the site. It was identified as possibly a refractory or fire brick (Fayette Ellis, Acme Brick, personal communication 1988). The term "fire brick" describes a brick that can withstand high temperatures. On one side of the brick, the width sloped at a 45 degree angle, and the words "SIDE SKEW" were stamped on it. The Mohs value was 4.5.

Four handmade brick wasters were recovered at 16JE207. Brick No. 7 consisted of two partial bricks fused together. Metric data were collected on both bricks (Table 7). Non-decorative glazing was present and the Mohs value was 3.5. Color varied from dark gray to olive. Brick No. 16 consisted of an estimated eight to ten bricks melted together. Metric data were measurable on two of the specimens from the total brick waster mass. Total brick waster mass length and thickness were recorded (Table 7). Non-decorative glazing was observed and Mohs values ranged from 3.5 to 4.5. The waster exhibited a range of colors (Table 7).

The single partial handmade brick found at 16JE208 was 9.0 cm wide and 6.3 cm thick. Length measurement was unrecordable because the brick was not a complete specimen. The brick had a maker's mark, the initial "H," and a Mohs value of 3.5. The maker's mark "H" is the brand of the Harvey's Canal Brick Manufactory which was established in 1848 (see Chapter IV).

Two bricks were collected from 16JE209. One specimen was a reddish-brown partial handmade brick with a non-decorative glaze. The width was 9.0 cm; length and thickness measurements were unavailable. The Mohs value was 3.5. The other was a partial machine-made fire brick stamped with the partial makers' mark of, "...STY/...1/..UIS." Most likely, the mark read, "CHRISTY/...1/ ST. LOUIS;" there may have been additional markings in front of the "1." The brick was 11.1 cm wide and 5.0 cm thick; no length measurement could be taken.

Bricks from 16JE211 included two whole handmade bricks, four partial machine-made bricks, one brick produced on a Lancaster automatic brickmaking machine, and one handmade brick waster. The average dimensions of the handmade bricks were 20.8 cm (n=2) x 9.3 cm (n=2) x 5.95 cm (n=2). Machine-made bricks averaged 20.9 cm (n=1) x 10.7 cm (n=5) x 6.0 cm (n=5). The Lancaster machine-made brick was 9.7 cm wide and 6.7 cm thick. The handmade brick waster was 20.0 cm x 8.1 cm x 5.8 cm. One of the handmade bricks from 16JE211 had the makers' mark H; the other handmade brick was marked "NDH." Hardness values ranged from 3.5 to 4.5, with an average hardness of 4.0. Both handmade bricks were reddish brown and had glazing (Table 7). The glazing was not decorative, but was the result of the bricks' proximity to the kiln fire.

The five machine-made bricks from 16JE211 also had makers' marks (Table 7). One was marked, "CHEMICAL NO. 1," and had an applied glaze. The other four machine-made bricks were fire bricks with

makers' marks that contained all or part of the words "ST. LOUIS." No glazing was present. Mohs values for the five bricks ranged from 3.5 to 4.5, with an average hardness of 4.1. There were no significant differences in metric data among the bricks marked "ST. LOUIS."

The Lancaster automatic machine-made partial brick stamped "ST. JOE" had elements of both handmade and machine-made bricks. The dimensions were 9.7 cm wide x 6.7 cm thick; the length measurement could not be taken because the brick was not complete. The brick was yellow and the Mohs value was 3.5. This brick was manufactured by the St. Joe Brick Works, Inc. in Slidell. The family-run company has been in business for more than 90 years making wood-molded, colonial face brick (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988). The bricks are manufactured on a Lancaster automatic brick machine using a soft mud process. While employing modern manufacturing methods, the bricks retain handmade qualities. The St. Joe brick was flecked with black, a characteristic caused by iron pyrite in the St. Tammany Parish clay (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988). The bricks are fired at temperatures ranging from 2250° to 2580°; a variety of colors can be produced by simply varying the temperature. The standard St. Joe brick measures 8 inches (20.32 cm) x 2 1/4 inches (5.72 cm) x 3 5/8 inches (9.21 cm), but dimensions vary with different molds (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988).

It was a common practice in the late 1800s along the Gulf Coast to add "St." in front of a person's name to acknowledge piety or charitability (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988). Joseph "St. Joe" McCarron started the company, but the bricks were not stamped "ST. JOE" until after McCarron sold the plant to Peter W. Schneider in May 1891. McCarron was forced to sell the plant to cover debts incurred in building the company and purchasing equipment (Sandra Pichon, St. Joe Brick Works, Inc., personal communication 1988).

The one handmade brick waster from 16JE211 had a makers' mark, the initial "H," and had a Mohs value of 3.5. This hardness value fell within the range for 16JE211 handmade bricks, but was softer than the handmade 16JE211 "H" brick. Munsell colors for the waster varied (Table 7).

Analysis showed no significant differences in metric attributes between the 16JE211 "H" brick and the specimen from 16JE208. The irregular brick waster from 16JE211 was not included in the comparison. The makers' mark on the "NDH" brick from 16JE211, in comparison, had smaller lettering used in its' makers' mark than those from 16JE207, but also had a Mohs value of 3.5 (for measurements of "NDH" makers' marks, see Table 7).

Analysis showed no significant differences in metric data between the 16JE211 "ST. LOUIS" bricks and the "ST. LOUIS" sample in 16JE209. The Mohs value of 4.5 for the 16JE209 specimen fit within the range of the 16JE211 "ST. LOUIS" bricks. Like the 16JE209 brick, brick specimen Nos. 27 and 28 from 16JE211 probably contained the word "CHRISTY" along with the words "ST. LOUIS" (Table 7). According to Charles Richards of the Richards Brick Company (personal communication 1988), the Richards Brick Company purchased fire bricks from the Laclede-Christy Fire Brick Company, St. Louis, between 1950 and 1960. The company formed by the consolidation of the two companies and was known to have stamped its bricks with both the Christy and Laclede names. The Laclede-Christy Fire Brick Company went out of business between 1950 and 1960.

In addition to the analysis of the bricks found at each separate site, the handmade bricks were compared with machine-made specimens. Metric data were examined to uncover differences among the bricks in each category and between the two categories. Brick wasters, the 16JE207 refractory brick, and the St. Joe Brick were not included in the analysis. No significant differences in metric data were found among the handmade bricks, nor were any found among the machine-made specimens. Comparisons between the two categories showed no significant differences in length and thickness measurements (Table 8).

Machine-made brick width measurements ranged from 10.2 cm to 11.1 cm (n=8), with an average width of 10.7 cm. Handmade bricks had widths that ranged from 8.0 cm to 10.0 cm (n=20), with an average width of 9.2 cm. An average width variance of 1.5 cm was found between the two categories. Comparison

of Mohs values between handmade and machine-made bricks revealed that although handmade bricks had values up to 4.5, the very lowest values, 1.5 to 2.5, were found only in the handmade brick group (Table 8).

The Mohs value of 4.5 for the machine-made refractory brick fit within the range of values for machine-made bricks (Table 8). Four of the five handmade brick wasters had Mohs value of 3.5; the fifth brick waster ranged in hardness from 3.5 to 4.5. These values fall within the higher range of hardness values for handmade bricks.

The Gretna site bricks then were compared with those recovered from 16PC33, Lakeland Plantation on the Mississippi River, in Point Coupee Parish (Goodwin, Gendel et al. 1983). At 16PC33, handmade bricks had average dimensions of 20.4 cm (n=12) x 3.6 cm (n=13) x 5.6 cm (n=13). Mohs values ranged from 2.0 to 3.5 (n=13), with an average of 2.9. Machine-made bricks from 16PC33 had average dimensions of 21.32 cm (n=5) x 10.4 cm (n=11) x 6.3 cm (n=11), and all had Mohs values of 5.0.

Handmade bricks found in 16JE207 were, on average, 0.3 cm longer, 0.4 cm narrower, and 0.4 cm thicker than handmade bricks in 16PC33. Mohs values, on average, were nearly the same (2.9 versus 3.0). The machine-made bricks from 16JE207 were, on average, 0.37 cm shorter, 0.05 cm wider, and 0.45 cm thinner than those machine-made examples in 16PC33. Mohs values for machine-made bricks from 16JE207 were less (3.5 versus 5.0) than those machine-made specimens from 16PC33.

The handmade brick from 16JE208 was 0.6 cm narrower and 0.7 cm thicker than the handmade bricks from 16PC33 (average dimensions). The Mohs value for the 16JE208 brick was slightly harder (3.5 versus 2.9) than the average hardness of 16PC33 probable handmade bricks.

The one handmade brick collected from 16JE209 was 0.6 cm narrower and slightly harder (3.5 versus 2.9) than the average 16PC33 probable handmade specimens. The one machine-made brick from G-5 was 0.7 cm thicker and 1.3 cm thinner than the average 16PC33 machine-made bricks. The Mohs value for the 16JE209 machine-made specimen was slightly less (4.5 versus 5) than the average Mohs value for the machine-made bricks of 16PC33.

Handmade bricks from 16JE211 on average were 0.4 cm longer, 0.3 cm narrower, and 0.4 cm thicker than the 16PC33 handmade bricks. Machine-made bricks from 16JE211 were 0.42 cm shorter, 0.3 cm wider, and 0.3 cm thinner. 16PC33 machine-made specimens were, on average, harder than those machine-made bricks from 16JE211. The 16JE211 handmade bricks, however, on average, were harder than the handmade examples from 16PC33.

A final comparative study was done, using the brick attribute data gathered from the brick assemblage found at 16IV147, near White Castle, Iberville Parish, LA (Goodwin, Armstrong et al. 1988). Data from the "country" (Shenkel and Beavers 1978) bricks of 16IV147 were compared to the handmade bricks found in Gretna survey sites. The average dimensions of the 16IV147 bricks were 21.6 cm (n=5) x 10.55 cm (n=14) x 5.73 cm (n=14). The average Mohs value was 2.65 (n=14) for 16IV147 and ranged from 1.5 to 3.5.

The 16JE207 handmade bricks were slightly harder, on average, with the Mohs value of 3.0. 16JE207 handmade bricks were, on average, 0.9 cm shorter, 1.4 cm narrower, and 0.27 cm thicker than the 16IV147 examples. The 16JE208 handmade brick was 1.6 cm narrower and 0.6 cm thicker than the average 16IV147 specimens. The 16JE208 brick, with a Mohs value of 3.5, was harder than the average 16IV147 bricks. The 16JE209 handmade specimen was, on average, 1.55 cm narrower and harder, with a Mohs value of 3.5, than the average 16IV147 specimens. The 16JE211 handmade bricks were 0.8 cm shorter, 1.3 cm narrower, and 0.22 cm thicker. Handmade bricks at 16JE211 were harder on average, with a Mohs value of 4.0 cm. In general, only slight attribute differences were observed between Gretna site brick specimens and those from 16PC33 and 16IV147. Although the attribute data may have been recorded and compared, the sample sizes used in these comparisons are too small to permit definitive conclusions about differences in bricks from rural and urban settings, or about large scale patterns in brick morphology. Nevertheless, these analyses should help to attain that goal in the future.

CHAPTER VIII

SUMMARY AND RECOMMENDATIONS

Summary

An archeological survey of the Gretna Phase II Levee Enlargement Item located six historic archeological sites and three historic standing structures within the project area (Table 9). Level II testing revealed that three of the six sites (16JE207, 16JE210, and 16JE212) may satisfy one or more of the National Register significance criteria. The three remaining sites (16JE208, 16JE209, and 16JE211) do not possess archeological integrity or research potential, and do not satisfy the criteria necessary for inclusion on the National Register. The standing structures recorded during the survey included two domestic structures, and a bell and platform adjacent to the Harvey Canal; none of these structures proved to be a significant cultural resource. These archeological sites and standing structures are summarized and evaluated below.

Site 16JE207 is above the Harvey Canal, at the upriver end of the historic N. N. Destrehan property (cf. Figure 2). The remains of a late nineteenth and early twentieth century office building are located on the riverbank at the west edge of the site. These remains have no archeological integrity, and they are not significant archeological resources; further archeological testing of that component is not warranted. In addition, numerous handmade bricks and brick wasters were located along the shoreline.

During the Level II testing of the site, 39 probes, 9 auger tests, and a 1 x 1 m excavation unit were placed in the site. This testing resulted in the location of two, and possibly three antebellum archeological features. Feature 1 is an antebellum feature constructed from handmade bricks. It has a rectangular north end connected to a linear vaulted passageway to the south. While the function of Feature 1 has not been identified positively, there are several possibilities. It is approximately in line with a surviving canal (the old Destrehan canal) located 1500 feet to the south (Figure 1). Thus, it may be associated directly with the canal. The problem with this theory is that the rectangular brick enclosure at the northern end would pool the water as opposed to allowing a free flow into or out of the feature. On the other hand, it may have been used within an industrial complex for a constant pooled water supply. For example, considerable water was necessary in a brickyard for processing clay into bricks. In addition, the 1819 Bouchon plan (Figure 9) depicts an "Ancient Saw-mill" by the old Destrehan Canal, in the immediate vicinity of 16JE207. The remains of what may be a brick rubble road also were located. The purpose of this road, which does not extend beyond Feature 1, remains unclear. This road could be the public road illustrated on the Zimpel map (Figure 2), although the feature may be too far inland. A third obstruction, possibly another brick feature, was located during probing between the road and the river; it has yet to be identified.

Based on located documentary sources and the archeological record, two, and possibly three, antebellum components may be present within the site complex. Plotting the site location onto the 1834 Zimpel map indicates that the site is located near the riverward end of the old Destrehan Canal (not the Harvey Canal). The 1819 Bouchon plan (Figure 9) of this property shows the canal with an "Ancient Saw-mill," implying this sawmill was constructed in the eighteenth century. The plan also depicts a "Dwelling, Kitchen and Store" in the 16JE207 vicinity. The 1834 Zimpel map (Figure 2) shows a residential complex and formal gardens in this area, while the 1839 Springbett and Pilie map (Figure 4) depicts two additional structures between the formal gardens and the river. In 1849, this property was sold to the Bobb brothers, who operated a brickyard in the vicinity. While two located maps illustrate "Bobb's Brickyard," neither is of adequate detail to determine the exact location of the brickyard. This brickyard was important in the mid-nineteenth century development of Harvey. In addition, Feature 1 may be a water procurement or drainage feature; its relationship to the rest of the site remains unclear.

Site 16JE208 is the remains of a late nineteenth/early twentieth century wharf used by the Louisiana Cypress Lumber Company. Only a small portion of the wharf survives, and those remains have been impacted by twentieth century levee and revetment construction. Historic maps document the location and basic form of this wharf; therefore, additional investigations would not contribute any valuable information about contemporary wharves, or about the associated lumber company. This site does not possess the

Table 9

ARCHEOLOGICAL SITES AND HISTORIC STANDING STRUCTURES LOCATED WITHIN THE PROJECT AREA

<u>Site Number</u>	<u>Location</u>	<u>Date</u>	<u>Description</u>	<u>Recommendations</u>
ARCHEOLOGICAL SITES				
16JE207	River Mile 98.6-R, Batture	19th, Early 20th Century	Multicomponent site, probably includes Destrehan formal gardens; Bobb brickyard; and, drainage feature.	Further work to determine significance.
16JE208	River Mile 98.1-R, Batture	c. 1889-1920s	Wharf remains from the Louisiana Cypress Lumber Company.	Not significant; no further work.
16JE209	River Mile 98.1-R, Inland from Levee	c. 1889-1960s	Mixed Remains of three double shotgun houses within the Louisiana Cypress Lumber Company complex.	Not significant; no further work.
16JE210	River Mile 97.9-R, Inland from Levee	c. 1770s-1840s	Possible remains of the Henderson/Foucher brick kiln.	Potentially significant; further work to determine significance if site becomes threatened.
16JE211	River Mile 97.0-R, Batture	c. 1880s-1920s	Handmade and machine made bricks and chemical rings on riverbank.	Not significant; no further work.
16JE212	River Mile 96.3-R, Batture	c. 1815-1870s	Deeply buried brick fragments, pearlware, coal, and coal cinders.	Further work to determine significance.
STANDING STRUCTURES				
SS-1	River Mile 98.2-R, Adjacent to the Harvey Canal	c. 1910-1937	Harvey Canal Fog Bell, with numerous structural modifications	Not significant; no further work.

<u>Site Number</u>	<u>Location</u>	<u>Date</u>	<u>Description</u>	<u>Recommendations</u>
SS-2	River Mile 96.3-R; 1011 Washington Street, McDonoghville	c. 1930-1945	Single shotgun house, with numerous structural modifications.	Not significant; no further work.
SS-3	River Mile 96.3-R; 1017-1019 Washington Street, McDonoghville	c. 1930-1945	Double shotgun house, with numerous structural modifications.	Not significant; no further work.

quality of significance as defined by the National Register significance criteria (36 CFR 60.4). No additional archeological testing is recommended at 16JE208.

Site 16JE209 is the archeological remains of one to three late nineteenth century double shotgun houses. These houses were within the Louisiana Cypress Lumber Company complex; they may have been built in the early 1890s to house employees of the company. They still were used in 1937, and possibly into the 1960s, after which they were razed. The archeological deposits located at 16JE209 date from the late nineteenth and twentieth centuries, and probably were formed when the houses were destroyed. The architectural style of the houses is well documented, and many examples have been preserved. In addition, the deposits associated with the site are disturbed. This site does not possess significance as defined by the National Register significance criteria; no further work is recommended at 16JE209.

Site 16JE210 was located within the WITCO Chemical Company plant. The site was tested with 26 probes, 7 auger tests, and one 1 x 1 m excavation unit. The recovered artifacts consisted of handmade bricks and brick fragments, which were located between 60 to 140 cm below surface. A brick obstruction, 10 m in diameter, was located at the site. A 1 x 1 m excavation unit, placed on the edge of the obstruction, produced handmade brick rubble, but no in situ brick. In addition, a fragment of banded whiteware was recovered just above the brick. When plotted on the 1834 Zimpel map (Figure 2), 16JE210 appears to be a brick kiln illustrated on maps dating from 1819 to 1839 (Figures 4 and 9), and possibly referred to as early as 1773. While no in situ brick was encountered, it may be present within the brick rubble. A considerable amount of petroleum-based waste has been deposited at the site. This waste could hinder future archeological excavations. While this site is potentially significant, the original levee construction schedules have been modified, removing 16JE210 from the project corridor. Should the site become threatened in the future, further testing would be necessary to evaluate its significance.

Site 16JE211 consists of numerous bricks and chemical ring fragments scattered along the bank of the Mississippi River. Both handmade and machine-made bricks were recovered. In addition, many broken chemical rings, used in making sulfuric acid, were mixed with the bricks. The artifacts originated from the adjacent Davison Chemical Corporation plant, a portion of which was razed prior to floodwall construction. Archeological testing on the riverbank failed to locate any intact historic cultural deposits. The temporal heterogeneity of the artifact assemblage, along with the intermixing of these artifacts among riprap and other upper bank protection, indicates that these artifacts are in secondary context and do not constitute an in situ archeological deposit. The site has both low research potential and it is lacking in archeological integrity. Thus, it does not possess significance as defined by the National Register significance criteria. No additional work at the site is recommended.

Site 16JE212 is a deeply buried site located on the batture in historic block 23 of McDonoghville (Figure 2). The town of McDonoghville was established in 1815 by philanthropist John McDonogh. It was designed as a working class community, with fairly inexpensive small lots. For example, a portion of McDonoghville was commonly known as "Freetown" because of the large number of freed slaves who owned lots in the town. Largely because of the low socioeconomic status of the town residents, fairly little archival documentation about the town has survived. The site could contain vital urban archeological data which could shed light on suburban lifeways of antebellum free people of color, as well as on the other working class residents of McDonoghville.

Since 1834, nearly 120 m of the riverbank has been eroded by the Mississippi River. During the mid-nineteenth century, the site was well within the limits of McDonoghville; now the site is on the batture (Figure 3). Historic artifacts were recovered from several auger tests at depths of 150 to 250 cm. The majority of artifacts were recovered between 170 and 210 cm. While few diagnostic artifacts were recovered, three fragments of pearlware suggest a date from the first half of the nineteenth century. Although no features were located, the presence of intact cultural features is possible. Both the archeological and historic evidence suggest that 16JE212 may be a significant cultural resource. Further testing is necessary to determine the extent, integrity, and composition of the archeological deposits, to assess their research potential, and to evaluate the archeological significance of the site.

Three historic standing structures were recorded within the project area. Adjacent to and downriver from the Harvey Canal is SS-1, a bell platform and light. The bell was used originally to guide the Louisiana Street Ferry across the Mississippi River during periods of low visibility. More recently, the bell has been used to direct the flow of riverine traffic into the Harvey Canal. The bell, cast in 1898, probably was erected in its current location between 1910 and 1937; the cement foundation has been modified, and the original light and wooden support frame for the bell have been modified and replaced in the past few decades. Even though the bell is original, and the basic hammer system may be original, the remainder of the structure has little architectural integrity. While the bell and hammer assembly should be preserved as an important object associated with the development of the Harvey Canal, no further architectural recordation of the structure is recommended.

Two historic houses were located within the project area. These houses, a shotgun house and a double shotgun house, were constructed ca. 1930-1945. Modifications to SS-2 (the shotgun house) included an addition onto the rear and a rebuilt porch; both modifications adversely affected the historic integrity of the structure. The double shotgun house (SS-3) also received extensive modifications. A porch and back room have been added in recent years, and the original roof has been replaced. Neither house has historic structural integrity. In addition, these architectural styles are well documented, and many examples have been preserved. Neither house is a significant architectural resource. No additional recordation of these houses is recommended.

Recommendations

Of the six archeological sites and three standing structures, only three archeological sites have the potential to be significant cultural resources. These three sites are the multicomponent site 16JE207 that may include N. N. Destrehan's formal gardens, Bobb's brickyard, and a drainage feature; 16JE210, which may represent the remains of a late eighteenth and early nineteenth century brick kiln; and, 16JE212, the deeply buried nineteenth century site on the McDonoghville batture. Each of these three sites may contain information important in history [36 CFR 60.4(d)]. In addition, 16JE207 and 16JE210 may be associated both with events that have contributed to the broad patterns of history [36 CFR 60.4(a)], and with the lives of people who were important to local and regional economic development [36 CFR 60.4(b)]. The following recommendations are made for the three potentially significant archeological sites.

Site 16JE207

Both historical research and archeological testing should be conducted to evaluate 16JE207. The available historical documents should be examined to interpret more fully the site-specific land tenure history and development. Since the archeological deposits are less than 1 m deep, the use of a backhoe to test the site may compromise the archeological record. Therefore, the site should be systematically probed, at 3 to 4 m intervals, to locate and map obstructions. This would require the placement of 100 to 120 probes. This should provide a fairly detailed plan of the subsurface obstructions. Up to 12 auger tests should be excavated so obstructions can be verified and interpreted. Six 1 x 2 m excavation units also should be placed at the site. At least one unit should be placed in the downriver, upper bank, brick concentration, and one or two should be excavated near the juncture of Feature 1 and the probable brick road. The remaining excavation units should be placed over obstructions so they can be interpreted. In addition, the interior of the north end of Feature 1 needs to be recorded.

Site 16JE212

Evaluation of 16JE212 should focus on a detailed historical examination of the immediate site vicinity. The site is buried below about 170 cm of fill, and extends to at least 210 cm. Archeological excavations to this depth would not be safe without extensive shoring, and large scale, deep excavations on that portion of the batture could compromise the integrity of the levee system. Therefore, Phase II evaluation of the site should include a detailed examination of the available archival literature. Through this

historical study, the probable archeological components within the site should be determined, and these components should be evaluated within the framework of significant local and regional themes. The historical examination should be supplemented with 25 auger tests, which could be used to locate in situ foundation remains and historic refuse deposits.

Site 16JE210

Site 16JE210 is a concentration of handmade brick rubble located within the WITCO Chemical Corporation. It is in the approximate location of a brick kiln which is shown on maps dating from 1819 to 1839, and the structure may date from as early as the 1770s. If in situ remains are present, the site may represent a significant cultural resource. However, the setback area in which 16JE210 is located has been removed from the proposed levee enlargement schedule. Therefore, the site will not be adversely affected by construction, and no further archeological testing at the site is recommended. Should the project specifications be modified to include the 16JE210 site area, further archeological testing will be necessary to evaluate the significance of the 16JE210 archeological resources.

Historical Documentation

The following historical documents are available for use during the proposed Phase II archeological testing of 16JE207 and 16JE212. These documents should provide specific data necessary for the evaluation of the two sites.

Colonial Records

The Notarial Records of the Notaries of Louisiana and Court Proceedings of the Spanish Cabildo of Louisiana (1769-1903) is the largest collection of colonial Louisiana materials in the world, and it is available on microfilm (201 reels) at the State Museum. The Julien Poydras Letterbook (1794-1800) is a manuscript on file at the State Museum entitled "Private and Commercial Correspondence of an Indigo and Cotton Planter 1794-1800," and it has direct references to the westbank property area.

Plans and surveys of the study area are not likely to exist from this early period. However, if such maps exist, the State Museum, which houses over 3,000 historical maps, is the likely location of study area maps from the colonial period.

The Antebellum Records

The Louisiana State Museum contains the John McDonogh Papers (1813-1846), and The Successions of White and Black Slaveowners (1800-1858), which document study area plantation emancipations, runaways, slave conditions, agriculture, and inventories. The Special Collections at Tulane University have the Harvey, Destrehan, Derbigny, Labarre, and McDonogh papers. The Historic New Orleans Collection has Harvey, Labarre, and LeBreton papers. These papers contain personal letters, receipts, business statements and correspondences that may be germane to the sites in question.

Surveys and Plans

Benjamin Buisson was the Jefferson Parish Surveyor during the antebellum nineteenth century. During the tenure of Buisson's successor, William H. Williams, Buisson's Book I was lost to fire. The Historic New Orleans Collection (Manuscripts Division) has Buisson's Book II. The New Orleans Notarial Archives (NONA) has plan books dating back to the late eighteenth century. The current NONA plan book index (by Randolph Waldo 1946) references many study area survey plans (i.e., Benjamin Buisson November 10, 1849) that since have been misfiled. The current archivist is attempting to reorganize NONA, including the

cataloging of the misfiled plans.

Private land survey and title companies have much information useful to regional archeologists. These include a McDonoghville file at Walker and Avery, Inc. showing the historic levee setbacks (1859) and original layouts of individual lots, along with a substantial collection of historic surveys of the New Orleans area. Other private survey and title firms in the New Orleans area, such as J.J. Krebs and Sons, and Gandolpho, Kuhn, Luecke and Associates, also have historic surveys of the Gretna project area. These records include the H. L. Zander records, various historic plans (i.e., Pilie 1800-1850), early twentieth century surveys of Hotard and Webb, and half of the Guy J. Segher's Collection (1865-1920). The other half of the Segher Collection is at the Southeastern Architectural Archives at the Howard Tilton Library, Tulane University.

In summary, a number of sources are available for obtaining historical documentation and maps relevant both to 16JE207 and to 16JE212. Data from these sources, in conjunction with archeological testing, will enable the resources at 16JE207 to be evaluated fully. Also, the historical development of the 16JE212 site area should be documented so that archeological deposits at the site can be evaluated preliminarily without potentially dangerous deep testing.

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ACKNOWLEDGMENTS

During the field work and research for this report, certain individuals were instrumental in providing data and assistance. Ms. Carroll H. Kleinhans, COR, wrote the scope of services, and helped direct the research effort and the focus of the report. We also would like to thank the following persons: Keith Alexander, Lockmaster of the Harvey Canal Locks; Raymond Fuenzalida, General Manager of the Harvey Canal Limited Partnership; Sally Reeves, Archivist at the New Orleans Notarial Archives; John Walker, surveyor with Avery and Walker and Associates, Inc.; Gay Craft, Director of the Louisiana Collection, Howard Tilton Library, Tulane University; Dr. Joy Jackson, Director of the Center for Regional Studies, Southeastern Louisiana University; and, William Cullison, Curator of the Architectural Archives, Howard Tilton Library, Tulane University.

At Goodwin & Associates, Inc., William P. Athens served as project manager. Stephen Hinks was the crew chief. Field investigators included Benjamin Athens, Jennifer A. Cohen, Sylvia I. Favret, and Rebecca E. Bruce. Donna D. Livaudais and Julie R. Esthus prepared the graphic materials for inclusion in this report, and Lyn O'Brien and Liza Geissler produced the final report.

APPENDIX I
SCOPE OF WORK

REVISED
SCOPE OF SERVICES
CULTURAL RESOURCES SURVEY OF GRETNAL PHASE II
LEEVE ENLARGEMENT ITEM, M-99.4 TO 95.5-R
DELIVERY ORDER 02
CONTRACT DACW29-88-D-0121

1. Introduction. This delivery order calls for a cultural resource investigation of the Gretna Phase II Levee Enlargement Item located between approximate river miles 99.4 and 95.5 along the right descending bank of the Mississippi River in Jefferson Parish, Louisiana (Enclosure 1, H-8-30206). The project reach includes both Mississippi River batture (extending from the riverside toe of the Mississippi River Levee to the low water line of the river bank) and three setback reaches on the landward of the Mississippi River Levee (see Enclosure 1). The Contractor is not responsible for surveying the no work areas defined by Enclosure 1 (Levee Stations 4149+55 to 4152+00; 4188+50 to 4218+27; and 4227+62.57 to 4237+00). The work requires survey of the project right of way, inventory of all sites within the project reach, establishment of the significance of all sites, and structures, and preparation of comprehensive draft and final reports of investigation for the study. The contract period for this delivery order is 195 days.

In preparing a proposal for this delivery order, the Contractor will present a research design for survey which takes prior historic research and the extent of modern land modification into account in identifying any areas in the reach which would be unproductive to survey. All setback reaches (Levee Stations 4158+50 to 4168+52, 4172+50 to 4183+77, and 4268+34 to 4298+50) will be surveyed in their entirety.

2. Description of the Study Area. The project is in an urban setting on the westbank of New Orleans. The project reach has sustained considerable disturbance from public and private development. (Enclosure 2, Sheets 67 to 70, Lafourche Basin Levee District maps). The entire reach has been revetted.

3. Study Requirements. The work to be performed by the Contractor will be divided into three phases: Literature Search and Records Review; Intensive Survey and Site Assessment; and Data Analysis and Report Preparation.

a. Phase 1: Literature Search and Records Review. The Contractor shall commence, upon work item award, with a literature, map, and records review specific to the project reach . This phase shall include but not be limited to review of historic maps, the State Archeologist's site and standing structure files, the National Register of Historic Places, geological and geomorphological data, archeological reports, ethnohistoric records, historic archives, and public records.

At a minimum, the literature and records review will establish the distribution of prehistoric and historic sites in the region and their proximity to the study area; identify previously recorded sites, standing structures, National Register of Historic Places properties and National Landmarks in or in close proximity to the project reach; provide national, regional and local context for assessing the historical, architectural and archeological significance of all sites and structures located in the project reach; and predict

resources which can be expected to be located within the project reach. Economic and social trends, channel migration, major natural events, and all previous construction affecting land use patterns and the state of preservation of predicted resources will be analyzed and presented in specific terms of the project reach.

b. Phase 2: Intensive Survey and Site Assessment. Survey of the project reach shall commence within 15 days of delivery order award.

The Technical Representative will be informed ahead of time of the testing schedule of all sites.

An intensive survey is a comprehensive, systematic, and detailed physical examination of a project item for the purpose of locating and inventorying all cultural resources within the impact zone. The survey will be performed within the context of an explicit research design, formulated in recognition of all prior investigations in the study area and surrounding region, and will include subsurface testing and evaluation of identified resources against the National Register of Historic Places criteria of significance (36 CFR 60.4). The survey will provide adequate information to seek determinations of eligibility from the Keeper of the National Register, and will innumerate project effects on each resource located within the study area. The evaluation will be conducted utilizing current professional standards and guidelines including, but not limited to :

the National Park Service's draft standards entitled, "How to Apply the National Register Criteria for Evaluation", dated June 1, 1982;

the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register on September 29, 1983;

Louisiana's Comprehensive Archaeological Plan, dated October 1, 1983;

the Advisory Council on Historic Preservation's Section 106 Update/3 entitled, "Manual of Mitigation Measures (MOMM)", dated October 12, 1982.

The survey shall be an intensive pedestrian investigation augmented by systematic subsurface testing. Maximum transect width will not exceed 20 meters. The Contractor will include sample augering in the investigation methodology to locate buried sites or cultural strata, where appropriate.

The areas surveyed and all sites located within project boundaries will be recorded (in ink) to scale on the appropriate 7.5 minute quadrangle and aerial mosaic project maps. The quadrangle maps will be used to illustrate site forms (see below). The project maps will be returned to the COR by 1 November 1988.

All sites will be sufficiently tested using shovel, auger or other excavation techniques to determine and record site size, depth of deposit, stratigraphy, cultural association, function, approximate date of occupation, and condition. Site boundaries, test excavation units at sites (including test pits, shovel tests, auger intervals, backhoe trenches, etc.) and activity areas will be measured and mapped to scale. All scaled field maps will accurately reference grid locations in terms of levee stations or range markers in close proximity to the illustrated work area.

The Contractor will fill out and file state site forms with the Office of the Louisiana State Archeologist and cite the resulting state-assigned site numbers in all draft and final reports of this investigation. The Contractor will submit updated state site forms to the State Archeologist for all previously discovered sites within the project reach. These forms will correct previously filed information and summarize what is known of each resource as a result of this investigation. One unbound copy of each site or standing structure form will be submitted to the COR with the draft report.

All standing structures located in the survey area will be identified by function, dated and described using standard terminology of formal and/or vernacular architecture, as appropriate to each structure. Each standing structure will be recorded (using a simplified, standardized format selected by the Division of Archaeology and Historic Preservation), accompanied by a minimum of three, clear, black and white photographs showing front, back and side views of the structure. The Contractor will determine whether subsurface features are present. If present, the structure and all features shall be treated as a site, which shall be mapped and recorded on State of Louisiana site forms. The Contractor shall assess the significance of all standing structures using information collected during the survey and literature search phases of this work item.

c. Phase 3: Data Analyses and Report Preparation. All survey and testing data will be analyzed using currently acceptable scientific methods. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Office of the Louisiana State Archeologist. The catalog system will include site and provenience designations.

All literature, map search, field and laboratory data will be integrated to produce a single, graphically illustrated, scientifically acceptable draft report discussing the project reach as a whole. All sites located within the reach will be related in text and tabular form to the appropriate construction item(s) for accurate future reference. Project impacts on all cultural resources located and/or tested by this study will be assessed. The Contractor shall provide justification of the rationale used and a detailed explanation of why each resource does or does not meet the National Register significance criteria (36 CFR 60.4). For each resource recommended as eligible to the National Register and assessed to be impacted by construction, the Contractor shall recommend specific mitigation alternatives. Inferential statements and conclusions will be supported by field, map or archival data. It will not be sufficient to make significance recommendations based solely upon the basis of assumed site condition, artifact content, or the presence or absence of features.

4. Reports.

a. Monthly Progress Reports. One copy of a brief and concise statement of progress shall be submitted with and for the same period as the monthly billing voucher throughout the duration of the delivery order. These reports, which may be in letter form, should summarize all work performed, information gained, or problems encountered during the preceding month. A concise statement and graphic presentation of the Contractor's assessment of the monthly and cumulative percentage of total work completed by task shall be included each month. The monthly report should also note difficulties, if any, in meeting the contract schedule.

b. Draft and Final Reports (Phases 1, 2, and 3). Five copies of a draft report integrating all phases of this investigation will be submitted to the COR for review and comment 60 days after the date of the order.

An estimate of the acreage surveyed for this project will be given in the report introduction.

The draft and final reports shall include all data and documentation required by 36 CFR 60-63 to prepare requests for Determination of Eligibility to the National Register of Historic Places for those sites recommended by the Contractor as significant. For each significant cultural resource, the Contractor shall recommend appropriate mitigation procedures which are appropriate to the site or structure, its physical setting and condition.

These written reports shall follow the format set forth in MIL-STD-847A with the following exceptions: 1) separate, soft, durable, wrap-around covers will be used instead of self covers; 2) page size shall be 8-1/2 x 11 inches with a 1-1/2-inch binding margin and 1-inch margins on all other edges; 3) the text reference and Reference Cited formats of the Society for American Archaeology will be used. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual, dated January 1973.

The body of each report shall include the following: 1) introduction to the study and study area; 2) environmental setting; 3) review and evaluation of previous archeological investigations; 4) distribution of prehistoric and historic settlement in the study area; 5) research design; 6) description of field and laboratory methodology, statement of project objectives, and analysis of the effectiveness of the methods; 7) data analyses and cultural material inventories; 8) data interpretation; 9) integration of archeological and historical data; 11) conclusion; 12) data recovery recommendations for significant sites or structures; 13) references cited; and 14) appendices, as appropriate.

The COR will provide all review comments to the Contractor within 60 days after receipt of the draft reports (120 days after the date of the order). Upon receipt of the review comments, the Contractor shall incorporate or resolve all comments with the approval of the COR and submit one copy of the final draft for final review within 150 days of the date of the order. Upon approval, the Contractor will submit one reproducible master copy and 40 bound copies of each report of investigation, and all separate appendices to the COR within 195 days after the date of the order.

In order to preclude vandalism, the draft and final reports shall not contain specific locations of archeological sites.

5. Disposal of Records and Artifacts. All records, photographs, artifacts, and other material data recovered under the terms of this delivery order shall be recorded and catalogued in a manner compatible with those systems utilized by the Louisiana SHPO and by State and Federal agencies which store archeological data. They shall be held and maintained by the Contractor until completion of the delivery order. Final disposition of the artifacts and records will be in accord with applicable Federal and State laws. Unless otherwise specified, artifacts will be returned to the landowner or permanently housed with the Louisiana Division of Archaeology and Historic Preservation or in a repository selected by the State Archeologist. The Principal Investigator shall inform the COR in writing when the transfer of data has been completed and shall forward to the COR a catalog of items entered into curation. The location of any notes, photographs or artifacts which are separated from the main collections will also be documented. Presently existing private archeological collections from the project area which are used in data analyses will remain in private ownership. The Contractor shall be responsible for delivery of the analyzed archeological

materials to the individual landowners, the Louisiana SHPO's office, or any other repository designated by the Government following acceptance of the final report. All artifacts to be permanently curated will be cleaned , stabilized, labeled, catalogued on typed State curation forms, and placed in sturdy bags and boxes which are labeled with site, excavation unit or survey collection unit provenience.